EMOTIONS IN CLOSE RELATIONSHIPS:
A PROTOTYPE AND COGNITIVE APPRAISAL ANALYSIS

A thesis submitted in partial

fulfillment of the requirements

for the degree of

Doctor of Philosophy

at the

University of Canterbury

by

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University of Canterbury

1991

Acknowledgements

I am deeply indebted to my supervisor, Dr. Garth Fletcher, for his unending support, advice and encouragement. A truly gifted and inspirational teacher, Garth's enthusiasm, creativity, resourcefulness and (no doubt sorely tried at times) patience have made the last three years an enjoyable and rewarding learning experience for me.

I also wish to thank Professor Ken Strongman for his insights, interest and support. He has a gift for perceiving and interpreting the world in a more integrative fashion than most of us can manage, and consequently has provided stimulating ideas and new perspectives throughout the course of this thesis. Similarly, Professor John Harvey provided extremely helpful feedback and encouragement during his visit to the Department, and I thank him sincerely for his ongoing support.

A special tribute is due to Irene Campbell, who kindly and meticulously coded my results, and to my friends, family and colleagues, who have always shown a keen interest in my progress, and who have been a source of warmth and encouragement to me. In particular, I believe I owe my sanity to my husband Brian, who is, as always, the "still point of my turning world". I thank him for his good humour, his kindness, and for his infuriating ability to explain to me in five minutes what I have been puzzling over for weeks.

Finally, I will be everlastingly grateful to all my subjects, without whose willing and courageous co-operation this research would not have been possible.

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Abstract

Psychologists currently know very little about the nature and course of specific emotions in close relationship settings. Thus, the major purpose of this research programme was to explore emotion knowledge structures in marriage by making a detailed prototypical and cognitive appraisal analysis of four emotions: love, hate, anger and jealousy.

In Study 1, 160 subjects recalled a specific incident of love, hate, anger or jealousy (40 subjects per emotion), and wrote detailed accounts of their memories of the event (including their physiological symptoms, urges, behaviours and cognitive appraisals). Four distinct prototypes and cognitive appraisal patterns were obtained for the four emotions.

The purpose of Study 2 was to compare hypothetical emotion accounts with the recalled accounts from Study 1. Eighty subjects gave their opinions about typical love, hate, anger and jealousy eliciting events in marriage, and described probable urges, symptoms and behaviours. The results were in general accord with Study 1, suggesting that both recalled and hypothetical emotion accounts are derived from the same prototypical knowledge structures. However, there were discrepancies in hate-related urges and behaviours between the recall and hypothetical accounts. Specifically, recall accounts cited withdrawal urges and behaviours, whereas hypothetical accounts cited physically violent urges and behaviours.

In Study 3, the influence of causal locus on emotions and cognitive appraisal patterns was investigated. Subjects imagined experiencing either self, partner or externally-caused love, hate, anger or jealousy for their partners, and rated their cognitive

appraisals along the same dimensions as used in Study 1. Although the appraisal pattern for externally-caused hate differed from self or partner-caused hate, no differences were obtained for the other three emotions, according to causal locus. With the causal conditions combined, the cognitive appraisal results were in general accord with those obtained in Study 1 for all four emotions.

Study 4 was concerned with further testing the validity of the results from Study 1. Subjects selected the most appropriate emotion from a list of 8 emotions, based on varying amounts of information (event description only, event plus prototype, event plus appraisals, or event plus all information) derived from Study 1. Supporting the results of Study 1, adding prototypical and/or appraisal information significantly increased the accuracy of emotion identification over the event description condition, with jealousy being the most accurately identified, and hate the least. A partial replication in which the prototypical features for hate from Study 1 (withdrawal) were replaced by the features from Study 2 (verbal and physical abuse) decreased hate identification accuracy even further, suggesting that the recall accounts comprised reasonably accurate depictions of hate in marriage.

The overall results are discussed, first, in relation to the role of context in emotion prototype analysis. The advantages of taking a combined cognitive appraisal and prototype approach to the study of emotions are noted, and the implications of such analyses for close relationship research are outlined. Directions for further research are identified, including laboratory-based interactive studies, and ecologically valid investigations of emotions in marital settings. The discussion concludes with a brief commentary on the theoretical debate about basic emotions.

GENERAL INTRODUCTION

The notion that intimate sexual relationships are inextricably intertwined with strong feelings and emotions is a truism within romantic novels and common sense thinking alike. Psychologists, too, have often remarked on the importance of emotions in close relationships. Many of our most intense emotions are associated with the initiation, maintenance and disruption of affectional bonds (Bowlby, 1973), while Shaver (1984) has characterised close relationships as the very "crucible in which emotions are formed" (p. 7). However, in spite of the renaissance in the study of both emotions and close relationships over the last two decades, research and theory building have largely proceeded in a parallel, rather than interactive, fashion within the two areas. Consequently, the amount of research into affective phenomena that has been specifically conducted within an interpersonal context is both minimal and fragmentary (Fitness & Strongman, in press).

Despite the lack of integrative theorizing and research, it has become increasingly apparent over the last ten years that a significant point of convergence between emotion and close relationships is in sight. This point, which may be loosely defined in terms of "cognition", subsumes a wide range of conscious and unconscious phenomena, such as perception, memory, language, appraisal, evaluation, beliefs, attitudes, expectations and problem solving. Within the field of emotion, the most recent empirical and theoretical work has underscored the extreme difficulty of accounting for emotion without considering the central role of cognition (Strongman, 1987). Similarly, within the field of close relationships, the importance of understanding cognitive processes

and their role in relationship phenomena is reflected in the burgeoning research and theorizing in this area (Fletcher & Fincham, in press).

Consequently, the focus of this general introduction is on cognition and its role in emotion within the context of close relationships. The first goal is to briefly describe and discuss what has been learned from behavioural approaches to the study of affect in marital interaction (e. g. Gottman, 1979). The second goal is to outline Berscheid's (1983) theoretical analysis of emotion in close relationships, and to relate her theory to current understandings about cognition and emotion. The final goal is to describe how emotion prototype and cognitive appraisal analyses can elucidate our understanding of emotions within the context of marital relationships, and to provide a general overview of the current research programme.

Behavioural Accounts of Emotion in Close Relationships

Possibly the major reason for the lack of integrative research into emotion in close relationships, to date, derives from the problematic nature of emotion itself as an easily definable, observable, measureable entity. The term "emotion" is a theoretical construct, typically used as a catch-all generic to include all manner of phenomena that could loosely be described as emotional. Consequently, until recently, psychologists working within the area of close relationships have often opted to study more readily operationalized variables, such as observable behaviour, than to tackle the seemingly nebulous, subjective world of emotions.

However, some behaviourally oriented theorists and researchers

have attempted to come to grips with emotion in close relationships by operationalising emotion in terms of behavioural, or expressive, displays (e. g. Gottman, 1979). Typically, such researchers have investigated so-called emotional behaviour in the context of laboratory-based, marital interactions. For example, Gottman (1979) videotaped married couples' interactions in the laboratory, and had observers code the affective (otherwise defined as nonverbal) component of each message as positive, negative, or neutral. Results consistently indicated that distressed couples evince higher rates of negative affect than nondistressed couples, and that distressed couples are more likely to reciprocate each other's negative affect than nondistressed couples. Although it is arguable whether or not nonverbal behaviour constitutes a faithful reflection of inner emotional states, Gottman's findings have been confirmed by several researchers (e. g. Schaap, 1982; Margolin and Wampold, 1981; Revenstorf, 1984). Indeed, Notarius & Herrick (1989) have claimed that negative affect reciprocity is the most critical feature of distressed marital interaction.

Measuring and classifying nonverbal, or affective behaviours in a global fashion as either positive or negative is a parsimonious procedure, and has <u>some</u> theoretical validity in that the positive/negative dimension represents a generally recognized, meaningful distinction between emotion categories (Russell, 1978; Shaver, Schwartz, Kirson & O'Connor, 1987). However, it is obvious, to the layperson and marital researcher alike, that people in close relationships actually experience (even if they do not express) an enormous number of emotions. Although each of these can be subsumed within an overall pleasureable/displeasureable category, the amount of useful information that can be gleaned from this approach

is limited. For example, when researchers speak of negative affect reciprocity between distressed marital partners, it is never clear from the global affect codes whether or not the same affect is being reciprocated - does anger evoke anger, or contempt, or sadness?

In recognition of this problem, Gottman and his colleagues have recently developed a coding scheme to separate some of the components of negative affect into sadness, anger, disgust or contempt, fear and whining, and positive affect into affection, humour, interest, anticipation, excitement or joy (SPAFF: Specific Affect Coding Coding System; Gottman & Levenson, 1986). Various studies using this system have demonstrated the utility of refining global affect codes into more discriminable components. In one conflict discussion, for example, Gottman and Levenson (1986) found that 77.7% of the husband's negative affect consisted of anger or contempt, while those emotions accounted for only 6.7% of the wife's negative affect. However, 93.2% of her negative affect consisted of whining, sadness and fear.

Gottman's attempts to go beyond global affect measures and differentiate the kinds of emotions partners express are laudable, but the SPAFF coding scheme does present some problems. For example, some of the emotion categories would appear to be barely discriminable on the basis of observable behaviour (e. g. humour and joy; anticipation and interest), and one might question the status of whining as an emotion. Overall, the emotion coding categories can only be described as arbitrary, in that Gottman developed the scheme according to a rough, <u>a priori</u> theory about the most commonly experienced (or at least expressed) emotions in interactive contexts. Accordingly, using SPAFF, coders are unable to classify surprise, relief, embarrassment, guilt or frustration, or

discriminate between fear, worry and anxiety - emotions which may be highly relevant in interpersonal interactions. For example, a recent study on dating partners' most typical emotional reactions to self and partner-initiated relationship behaviours (Fitness & Fletcher, 1990) found that disgust and contempt (SPAFF categories) were very infrequently reported, whereas frustration, embarrassment and worry (not included in SPAFF) were relatively frequently reported. Subjects also discriminated between sadness and feeling hurt in their self reports. Thus, while SPAFF represents a move in the right direction away from gross measures of positive or negative affect states, more research is clearly called for in developing an emotion classificatory system adequate for capturing the full range of interpersonal affective behaviours.

One such emotion coding scheme was developed in the context of the Fitness and Fletcher (1990) dating study, in which subjects gave their emotional responses to hypothetical, positive and negative relationship behaviours. Using this coding scheme, researchers were also able to reliably classify self-reported emotions in response to problem-solving discussions between married couples in the laboratory (Fletcher & Fitness, 1990). However, there are ecological validity problems with both hypothetical behaviour studies and behavioural investigations of affective behaviour in laboratory-based, marital interactions. In particular, it is an arguable point to what extent the results of such studies generalize to the everyday emotional life of married couples. Researchers have begun to explore day-to-day marital interaction in the home by means of diary keeping and time sampling (e. g. Kirchler, 1988). However, to date there have been no detailed investigations of specifically emotional incidents in couples' lives.

Berscheid's Theoretical Account of Emotion in Close Relationships

In response to the lack of any theoretical overview of emotion in close relationships, Berscheid (1983) published an elegant and articulate theory that attempted to account for the occurrence of positive and negative emotion in close relationships. Her analysis was structured within the framework of a broad-based, evolutionary theory of emotion developed by Mandler (1975), who proposed that autonomic nervous system arousal is a necessary condition for emotion (though not sufficient), and that such arousal is typically triggered by a change, or interruption, in an organism's ongoing activities. In effect, arousal alerts the organism to a potentially dangerous state of affairs, and directs attention to the source of the arousal. Then, within the limits imposed by its cognitive-interpretive system, the organism analyses the meaning and relevance of the stimulus to its ongoing welfare, activities or plans. If the interrupting stimulus can be removed or dealt with quickly, or if a substitute response is available that permits the activity sequence or plan to be completed, then emotion may not be experienced. However, if the route to completion is perceived to be blocked, then negative emotion is typically elicited.

Mandler pointed out that much of an organism's day-to-day activity is routinised and automatic, and runs in organized action sequences (e. g. getting up and dressed in the morning, preparing meals, etc.). In turn, many of these organized action sequences constitute hierarchical structures of higher order plans, or goals, such as saving to buy a house, or hoping for a successful marriage. All these organized action sequences and higher order plans are

subject to a great deal of interruption, from the small - such as discovering as you are driving to work that your partner has neglected to put petrol in the car - to the large, such as learning that your partner no longer shares your dream of a successful marriage, and wants a divorce. According to Mandler's theory, these interruptions, if accompanied by physiological arousal, should lead to the experience of "hot" negative emotion, the intensity of which depends on such factors as the unpredictability, novelty, complexity, importance and negativity of the interruption.

Berscheid took as her starting point Kelley et al.'s (1983) definition of a close relationship as one in which a couple's interdependence patterns are characterized by high frequency and strength, covering a diverse range of activities, for a relatively long duration of time. Berscheid postulated that the greater the number of interconnections to each other's activities and plans a couple have, the greater the potential for interruption - that is, when one partner does something unexpected, or out of sequence, or fails to do something expected. If these interruptions are accompained by physiological arousal, then, in accord with Mandler's theory, negative emotion should be elicited.

Still working from within the interruption perspective, Berscheid also proposed an explanation for the elicitation of intense positive emotions in close relationships. Her hypothesis was that stimulus events that suddenly and unexpectedly remove obstacles or previously interruptive stimuli, or that complete an activity or plan sooner than expected, are likely to elicit strong, positive emotion. Consequently, within a close relationship, if each partner has the resources to remove obstacles for the other, and/or unexpectedly complete each other's organized action sequences or

higher order plans, then they are likely to experience strong, positive emotion towards each other. Indeed, Berscheid (1983) described the conditions for the experience of intense romantic love as the "sudden unexpected realization that another is able and willing to help one fulfill one's most cherished plans and hopes." (p. 155).

Berscheid's analysis is finely argued and intuitively plausible, and some of her predictions have also been empirically supported. For example, Fitness & Fletcher (1990) found that partner-initiated, relationship relevant behaviours, both positive and negative, elicited twice the number of self reported emotions than did self-initiated, relationship relevant behaviours. Clearly, we are most likely to experience emotion in a close relationship when our partner does something to surprise or interrupt us (whether pleasantly or not). However, although Berscheid's analysis provides a good theoretical basis for work on emotions in close relationships, it has not, as yet, engendered much research. In part, this is because, like the behavioural approach, it deals with emotions in a relatively global fashion. For example, while it is useful to know that a partner-caused interruption to another's activities, hopes, or plans is likely to elicit arousal and emotion, a great deal more information is required before it is possible to specify the kind of emotion (e. g. anger, or anxiety, or guilt) a person is likely to claim he or she is experiencing. Clearly, to predict a particular emotion for a participant in a relationship, we must identify not only their hopes and plans (and their potential for interruption or facilitation), but also the specific way in which they will interpret an event.

Cognitive Accounts of Emotion

One clue to the missing link between interruption and emotion in Berscheid's analysis relates to the individual's attributions about the perceived cause of the interruptive behaviour, along with such factors as the stability and globality of the perceived cause (Weiner, 1985). However, although close relationship researchers have been investigating couples' explanations and attributions for each other's behaviours for some years now (e. g. Holtzworth-Munroe & Jacobson, 1985; Fletcher, Fincham, Cramer & Heron, 1987; Grigg, Fletcher & Fitness, 1989; Fletcher & Fincham, in press), empirical investigations of the links between attributions and emotions within close relationships have only just begun.

One such study was recently conducted by Bradbury (1989). Using Gottman & Levenson's (1986) SPAFF emotion coding scheme, Bradbury examined the links between couples' attributions and emotional expression during laboratory-based marital interaction. As expected, different patterns of attributions relating to the causal locus, stability and globality of spousal behaviours, were related to the expression of specific emotions, such as anger, sadness and contempt. Clearly, despite the limitations of the SPAFF coding scheme, Bradbury's study makes an encouraging start in the exploration of attribution-emotion links within marital settings.

However, although the attributional perspective to emotion provides a useful approach to the study of the links between cognition and emotion, it has a rather limited focus. Cognitive appraisal theorists like Lazarus (1966) and Smith and Ellsworth (1985, 1987) adopt a wider perspective to the cognitive antecedents of emotion. These theorists argue that an individual's emotion

depends on a number of cognitive interpretations of his or her partner's behaviour, including an assessment of the degree to which their plans, hopes and wishes have been interrupted, and whether or not there is an effective means of dealing with the interruption. This approach implies taking into account not just the perceived causal locus of an interruptive behaviour, but also various cognitive appraisal dimensions such as the level of perceived obstacles in the situation, the degree of effort required to deal with the situation, its predictability, and so on.

A still wider, overarching perspective to the cognition-emotion relationship is advanced by emotion prototype theorists (e. g. Fehr & Russell, 1984; Shaver, Schwartz, Kirson & O'Connor, 1987). These theorists view attributions and cognitions as being derived from socially shared knowledge structures of emotion concepts. These knowledge structures comprise details about emotion eliciting events, along with their physiological, behavioural, cognitive and social components. Consequently, an analysis of specific emotion knowledge structures from within the context of marriage - from the cognitive construal of an eliciting event, to subsequent emotion and behaviour - has the potential to enrich our understanding of emotions both within, and beyond, the interpersonal setting.

Emotion Prototype and Cognitive Appraisal Analysis

Over the last decade, researchers have begun investigating the layperson's knowledge structures about the nature and course of emotion. A cornerstone assumption of this work is that event appraisals and knowledge structures determine, (or at least influence), how emotions are perceived, interpreted, labelled, and expressed. One particularly productive approach to analysing such emotion knowledge structures has been derived from Rosch's (1978)

work on prototypes, or mental representations of categories of objects, events, and concepts such as emotion. Each prototype comprises a set of organized features which characterize the most typical instance of a particular category, or concept. Membership in a particular category is determined by resemblance, i. e. particular objects, events or concepts are said to be members of a category by sufficient resemblance to prototypical exemplars (Russell, 1991). Since resemblance (and so, category membership) is a matter of degree, categories tend to have fuzzy boundaries, and members resemble each other in overlapping and crisscrossing ways that vary in kind and number.

Emotion prototypes tend to be script-like in nature, because emotion categories do not refer to single, discrete objects or events. As Russell (1991) comments, the features that constitute emotion concepts describe the subevents that make up the emotion: i. e., causes, beliefs, feelings, physiological changes, desires, overt actions, and vocal and facial expressions. Thus, to know the meaning of a term like anger, hate or jealousy, is to know a script for that emotion. Moreover, since closely related concepts like anger, hate and jealousy are held to share fuzzy boundaries, emotion prototype analysis has the potential to reveal both the shared and distinctive prototypical features of these emotions (e. g. eliciting events, physiological symptoms, urges, behaviours, control strategies, etc.).

Since the first emotion concept prototype analysis, conducted by Fehr and Russell (1984), a number of researchers have been engaged in this style of research (e. g. Shaver, Schwartz, Kirson & O'Connor, 1987; Fehr, 1988; Fehr & Russell, in press). The accumulated results of these studies show that emotion prototype

analysis can yield a rich store of information and hypotheses about the way in which specific emotions are perceived, interpreted, labelled and recalled.

A different, but no less important, approach to the study of the layperson's knowledge of emotion is concerned with cognitive appraisals that tend to elicit particular emotion labels. For example, love or liking is said to result from an interpretation that an event is pleasant, has positive implications for your well-being, or for the fulfillment of your needs and wishes, and has been caused by another (Roseman, 1984). Over the last ten years, a number of theorists have proposed their own sets of appraisal dimensions of emotion, e. g. Roseman (1984), Smith and Ellsworth (1985; 1987), Frijda (1986), Scherer, (1988), and Ortony and Clore (1989). Table 1 shows a comparison of emotion appraisal criteria as suggested by different theorists.

Although the cognitive appraisal models differ with respect to their proposed number of dimensions, and the kinds of emotions for which they attempt to account, they also share a number of general features. Most theorists agree that differing perceptions of the pleasantness, goal relevance, degree of control and agency of an event or stimulus are important features in the elicitation of different emotions.

While the number and nature of these cognitive dimensions is still to be determined, the real strength of the appraisal approach lies in its capacity to account for emotions, not simply as products of interruption (e. g. Berscheid, 1983), but as meaningful responses to goal/need/wish attainment or frustration. For example, if a couple are planning to go to a concert together and the husband arrives home so late that they cannot go, the wife may react with

Table 1

Comparison of Emotion Appraisal Criteria Suggested by Different Theorists

Event appraisal	Theorists					
	1	2	3	4	5	6
Novel	x	–	x	–	x	–
Sudden	x	–	–	–	–	–
Familiar	x	–	x	–	–	–
Predictable	x	–	–	x	–	–
Pleasant	x	–	x	x	x	–
Goal relevant (Important)	x	x	x	–	–	–
Certainty (Understanding)	x	x	x	x	x	–
Goal conducive (Obstacles)	x	x	x	x	x	–
Effort required	x	–	x	x	x	–
Cause, agent	x	x	x	x	x	x
Responsibility (Blame, credit)	x	–	–	x	x	x
Cause, motive (Stability)	x	–	–	–	–	x
Control (Power)	x	x	x	–	x	x

Note. 1 = Scherer (1988); 2 = Roseman (1984); 3 = Frijda (1986); 4 = Ortony and Clore (1989); 5 = Smith and Ellsworth (1985, 1987); 6 = Weiner (1985).

(Table adapted from Scherer, 1988).

anger if she blames him for his thoughtlessness, or with depression if she interprets the event as a reflection of his lack of love for her. Alternately, the wife may react with relief when he finally arrives home, grateful that he has not had an accident, or even with contempt at his inability to be on time for anything.

Clearly, cognitive appraisal analysis of specific emotions fits neatly within the more general, emotion prototype approach, in that an individual's interpretation of an event or stimulus, and consequent reaction to it, derives for the most part from emotion script-like knowledge structures. However, despite the fact that prototype and cognitive appraisal approaches apparently yield valuable complementary information, no research to date has utilised both procedures in the context of a particular study.

Another important feature of both research endeavours is that although researchers are fast becoming interested in the ways in which emotion prototypes and cognitive appraisal patterns differ cross-culturally (e. g. Boucher & Brandt, 1981; Scherer, Wallbott & Summerfield, 1986; Ellsworth, 1991), emotion script knowledge has, to date, been studied in a general, context-free fashion (with the sole exception of Smith & Ellsworth's, 1987, exam-room study). Nevertheless, emotions occur within distinct social contexts (such as marriage) which may influence emotion knowledge structures (including cognitive appraisal patterns) in a number of subtle ways. For example, when is it appropriate to get angry at your spouse? How should you express your anger (if at all?) What is your partner's reaction likely to be? While the research emphasis remains predominantly global and context-free, we can have only vague guidelines as to what precipitates particular emotions, how they

feel, what kinds of cognitions typically precede and accompany them, how they are typically expressed and controlled, and why, and what their consequences are, within close relationship settings.

Summary

Psychologists currently know very little about emotion in close relationships, other than the fact that unhappy couples tend to express and reciprocate more negative affect (defined with respect to nonverbal behaviour) than happy couples in laboratory interactions. With respect to emotion elicitation, Berscheid's (1983) application of Mandler's (1975) interruption theory of emotion to close relationships provides a useful approach. However, Berscheid's theory is not informative about the nature and course of specific emotions in close relationship settings.

Working from within a cognitive perspective, emotion theorists have recently begun to explore the layperson's naive understandings and knowledge structures of specific emotions. In the main, these studies have taken the form of cognitive appraisal or emotion prototype research. However, no research to date has combined the two approaches, despite the wealth of complementary information such an integrated approach would yield. Nor have researchers located their studies of specific emotions within distinct social contexts, despite the fact that the socially constructed rules for emotional experience and expressibn appear likely to vary as a function of social setting.

Given that people constantly make use of their implicit emotion knowledge to understand and manage their interpersonal interactions, it seems clear that emotion prototype and cognitive appraisal data, gathered from within a marital setting, could provide a rich fund of information and hypotheses about emotions in close relationships.

The present studies attempt to provide such a set of data.

The Current Research Programme

As I have attempted to make clear, our knowledge and understanding of the ordinary, everyday emotional life of married couples is minimal and fragmentary. Consequently, the overall aims of this research programme were twofold. The first aim was to extend our knowledge of specific emotions in marriage by making a detailed, prototype and cognitive appraisal analysis of four, interpersonally relevant emotions: love, hate, anger and jealousy. The second aim was to identify the shared and unique prototypical and cognitive appraisal features of all four emotions, and to compare the emotion profiles obtained in this specific, marital setting, with the context-free profiles obtained from previous research. Each of these aims is discussed in greater detail below.

Emotion Frequency and Intensity: Which Emotions?

Recent studies of emotion in people's everyday lives (e. g. Averill, 1982; Scherer, Wallbott & Summerfield, 1986), indicate that anger (and its variants, e. g. annoyance, irritation) is a frequently experienced, interpersonally relevant emotion. Similarly, recent marital interaction research (e. g. Bradbury, 1989; Fletcher & Fitness, 1990), suggest that anger is a highly relevant emotion in couples' problem solving discussions. However, the typical frequency and intensity of this and other emotions in the lives of married couples is still an unexplored issue.

Accordingly, I began this series of studies by having married subjects rate how frequently and intensely they felt love, hate, anger and jealousy towards their partners. These emotion labels were chosen, first, on the basis of their frequency of mention in both the Fitness & Fletcher (1990) dating study, and in self-report

reviews of laboratory-based, marital interactions (Fletcher & Fitness, 1990). Second, emotion prototype studies (e. g. Shaver et al., 1987) have demonstrated that laypeople rate these specific emotion labels as highly prototypical examples of the concept of emotion. Thus, it seemed likely that married subjects would be able to relate easily to these particular emotion labels.

Prototype Analysis of Love, Hate, Anger and Jealousy

The major aim of this research programme was to make a detailed prototype and cognitive appraisal analysis of love, hate, anger and jealousy in marriage. As previously noted, in their landmark study of emotion prototypes, Shaver et al. (1987) found that love, anger, hate and jealousy were ranked respectively first, second, third and sixth (out of a total of 213 emotion words) as representing good examples of emotions. However, research and theory related to these four emotions gives a muddied and inconclusive picture of their associated prototypes, both within close relationship contexts and across domains. For example, while the emotion of anger has been increasingly investigated (e. g. Averill, 1982; Scherer et al., 1986; Shaver et al., 1987; Ben-Zur & Breznitz, 1991), no survey or prototype studies have explored anger from within a specific, relational context (e. g. between married couples). Moreover, only Davitz (1969) has attempted to isolate those prototypical features that distinguish between the experience of anger, hate and jealousy. In his study of the language of emotion, Davitz found that while the layperson characterised both anger and hate as involving tension, hyperactivation, an impulse to move against (hit out) and helplessness, hate was also characterised by a feeling of incompetence, or weakness (blaming the self), and discomfort (inner ache). Unfortunately, the prototypical features

obtained for jealousy were identical to those obtained for hate. Thus, while these emotion profiles are informative, their constituent categories are too broad to allow useful comparisons between the three negative emotions.

Despite the dearth of research, a plethora of conflicting speculations has been advanced concerning how anger, hate and jealousy concepts might be related. For example, some theorists have proposed that hate is merely a personalized version of anger (e. g. Arieti, 1970; Frijda, 1986), while others have claimed that hate is a variant of the more primitive emotion of disgust (Oatley & Johnson-Laird, 1987). This is an important distinction, because the emotion of disgust typically comprises an urge to escape, or be rid of, the disgusting object (Rozin & Fallon, 1987), whereas anger comprises an urge to engage with, or confront an obstacle (Averill, 1982). In an early study of the differences between the emotion of anger and the development of hostile attitudes, McKellar (1950) found subjects tended to feel hate when it was not expedient to express anger, and also claimed that people feel the most hatred for those who bully and humiliate them, implying an imbalance of power. However, Solomon (1981) stated that true hatred can only exist between equals - otherwise it is contempt (when one perceives oneself to be superior), or resentment (inferior).

The situation with jealousy is also complicated, in that some theorists consider it to be a primary affective response that often occurs with a minimum of cognitive work (Buunk & Bringle, 1987), while other theorists consider jealousy to be a secondary, or compound emotion, the components of which are yet to be determined. For example, Plutchik (1980) proposes jealousy to be a complex mixture of the basic emotions of fear and anger; Panksepp (1982)

proposes a combination of panic, rage and expectancy; Sharpsteen (in press) proposes jealousy is composed of anger, fear and sorrow, and so on. For theorists of this persuasion, jealousy is not a unique emotional state that requires its own emotion word (Hupka, 1984), but a complex syndrome of primary emotions plus cognitive evaluations, elaborations and behaviours, that inform a person he or she is experiencing something society calls jealousy.

Even love is not exempt from theoretical speculation about its status as a real emotion. For example, Liebowitz (1983) described love as being the "strongest positive feeling we can have" (p. 48), and Sommers (1984) found 85% of her American subjects enjoyed experiencing love more than any other emotion (including joy). However, as with hate and jealousy, some theorists do not consider love (as opposed to lust) to be a fundamental emotion. For example, Kemper (1987) claims that love is not a basic emotion because it cannot be autonomically differentiated from happiness, and Frijda (1986), quoting Spinoza, claims that love is merely happiness with the object known - that is, a personalised version of happiness. Nonetheless, such claims conflict with prototype research that has shown the concept of love to be distinguishable from both happiness (Shaver et al., 1987) and commitment (Fehr, 1988).

A critical point worth emphasizing here is that emotion prototype research is concerned with the layperson's knowledge structures, or concepts, of emotions, rather than with biological structures per se. Thus, analysis of the layperson's knowledge structures about love, hate, anger and jealousy cannot resolve debates about the basicness or otherwise of emotions on a biological level. However, a thorough-going analysis of these structures can reveal the shared and unique features of different emotion concepts,

and delineate the subtle interrelationships between them. Thus, one of the major aims of this series of studies was to pin down for the first time, and in some detail, married subjects' prototypical knowledge structures involving recalled incidents of love (as opposed to lust, or passion), hate, anger and jealousy in their relationships. In particular, I focused on the extent to which hate, anger and jealousy possess distinctive prototypes, and sought to isolate those features (e. g. events or urges, symptoms or behaviours), that best distinguished between these emotions within a marital context. An additional aim was related to the importance of context in the derivation of emotion prototypes, and involved comparing the emotion prototypes obtained within a marital context with context-free emotion accounts from previous research (e. g. McKellar, 1950: Scherer et al., 1986; Shaver et al., 1987).

Cognitive Appraisal Analysis of Love, Hate, Anger and Jealousy

As with prototype research, cognitive appraisal studies (with the exception of Smith & Ellsworth's, 1987, exam room study), have examined the layperson's knowledge of emotion eliciting events in a context-free fashion. For example, anger is said to be elicited by the perception of an other-caused, negative event, involving a high level of perceived obstacles (Ellsworth & Smith, 1988a). However, if such a broadly categorized event were to occur within the context of marriage, any one of a number of negative emotions (e. g. hate, hurt or frustration) might be self-attributed, rather than anger per se. Clearly, more specific information is required about the event, the prototypical features, and the cognitive appraisal patterns that take the marital setting into account before the likely self attributed emotion can be predicted with confidence.

Consequently, along with making a detailed prototypical

analysis of love, hate, anger and jealousy in this series of studies, I also examined the degree to which subjects could discriminate between these emotions on the basis of cognitive appraisal dimensions within a marital context. Naturally, I expected the cognitive appraisal pattern for love to be readily discriminated from the negative emotions, and to comprise dimensions similar to those found by Roseman (1984), and Ellsworth and Smith (1988b). Thus, subjects appraising a love eliciting event were hypothesized to find it pleasant, other-caused, and motivationally consistent. Similarly, subjects appraising an anger eliciting event were hypothesized to find it unpleasant, other-caused, and involving a high level of perceived obstacles (Smith & Ellsworth, 1985). However, given the lack of previous cognitive appraisal research into hate and jealousy, I had no specific hypotheses regarding their cognitive appraisal patterns.

In order to increase the chances of identifying relevant cognitive dimensions for the four emotions, as well as distinguishing between them, a comprehensive range of cognitive appraisal dimensions was selected, including most of those described in Table 1. These dimensions were: pleasantness of the event; motivational consistency (was the event beneficial to the relationship?); importance of the event; ability to understand the event; predictability of the event's course; level of perceived obstacles associated with the event (interference with goals, plans, wishes); degree of anticipated effort required to cope, or deal with the event; responsibility (credit or blameworthiness) for the event (self and partner); perceived degree of control (power) over the event (self and partner); typicality of the event; and event expectedness. Also, given the propensity of married couples to

believe their partners directly cause their emotions (Ellis, 1961), three causal dimensions were included for each emotion (self, partner or circumstances), as distinct from who was to blame (or could take credit) for the eliciting event. The final dimension involved the perceived stability of the emotion's cause (for example, whether or not one partner caused the other to feel loving because he or she was simply a wonderful person).

OVERVIEW OF STUDIES

In Study 1, married subjects provided frequency and intensity data on four emotions (love, hate, anger and jealousy) in their relationships. Subjects then provided detailed, retrospective, prototypical and cognitive appraisal accounts for love, hate, anger and jealousy from their own relationships. The aim was to construct profiles for each emotion, and to ascertain the extent to which the prototypical and cognitive appraisal features distinguished between the emotions.

In line with similar emotion prototype and survey studies (e. g. Scherer et al., 1986; Shaver et al., 1987), I designed a questionnaire that led married subjects through recalled accounts of their emotional experiences, including details of their prior mood, continuing through details of the eliciting event, and ending with their mood after the incident was over. Cued questions relating to physiological symptoms, verbal and behavioural expression, cognitions during the event, urges, control strategies, and partner reactions were included. The questionnaire also comprised a number of forced choice questions relating to such variables as emotion duration, and several scales measuring subjects' remembered appraisals of the event (including emotional intensity).

I conducted a further three studies to test the validity of the results from the main study. In Study 2, married subjects wrote hypothetical accounts of the most typical love, hate, anger and jealousy incidents they could imagine occurring in a marital relationship. The purpose of this exercise was to test the hypothesis that subjects would draw upon the same kinds of emotion knowledge structures when recalling an actual emotional event, as

they would when imagining a typical emotional event. Of course, recalled accounts were expected to include a wider range of idiosyncratic features than hypothetical accounts. Nevertheless, if it is the case that emotion knowledge is represented in the form of widely held scripts, or prototypes, then the two kinds of account should be similar.

The purpose of Study 3 was to investigate the role of perceived causal locus on emotions and cognitive appraisal patterns. Subjects imagined they were experiencing an emotion (either love, hate, anger or jealousy) toward their partner in their own relationship, and that the emotion had been caused either by something to do with themselves, their partner, or some external circumstance. Subjects then wrote about the kind of event they had imagined and rated the cognitive appraisals along the same dimensions as used in Study 1. I also planned to check the validity of the appraisal results from the first study by combining the three causal conditions for each emotion, and comparing the cognitive appraisal patterns with those obtained in Study 1.

In the final study, the procedure in Study 1 was effectively reversed, in order to further test the validity of the prior results. Subjects were given combinations of the most relevant prototypical features and cognitive appraisal dimensions gathered from the first study for the emotions of love, hate, anger and jealousy, and were required to select the correct matching emotions. The emotion label "happiness" was also included as an emotion option in this study, to test whether subjects could discriminate between love and happiness, as well as between hate, anger and jealousy, on the basis of the prototypical and/or cognitive appraisal information gathered from Study 1.

Study 1

The first task in this study was to gather preliminary data about the typical frequency and intensity of love, hate, anger and jealousy in married couples' lives. The second task was to obtain detailed accounts of prototypical knowledge structures (including cognitive appraisal patterns) for recalled incidents of love (as opposed to lust, or passion), hate, anger and jealousy in marital relationships. In particular, I sought to determine the extent to which the three negative emotions possess distinct prototypes, and to identify those features (e. g. events or urges, symptoms or behaviours,) and cognitive appraisal patterns that best distinguished between them within a close relationship context. I also planned to compare the emotion prototypes obtained from within a marital context with context-free accounts of emotions from previous research (e. g. McKellar, 1950; Scherer et al., 1986; Shaver et al., 1987).

Method

Subjects

One hundred and sixty married subjects participated in this study, 80 males and 80 females. The mean age of the sample was 35 years (sd = 9.7 years, and the mean relationship length was 10.7 years (sd = 8.5 years). Fifty three subjects were recruited from the student population at the University of Canterbury, while the remainder came from the wider community. The latter group were spouses, friends or relations of the University sample.

Procedure and Overview

After being welcomed to the laboratory, subjects were given a brief overview of the tasks they were to complete, along with an assurance that their responses were anonymous and confidential.

Subjects then provided demographic data, and rated the frequency and intensity of love, anger, hate and jealousy in their marriages (see Appendix 1). Subjects also completed a number of individual difference measures, theoretically unrelated to the main thrust of the research programme (see Appendix 2).

After a short coffee break, subjects were given a two part questionnaire, randomly chosen from the questionnaires for love, hate, anger and jealousy (20 males and 20 females for each emotion). Subjects read the instructions and completed the questionnaire (approximately 45 minutes). Finally, subjects were thoroughly debriefed about the aims of the study and thanked for their participation. Subjects also provided their addresses in order that a results report could be posted to them. This report was duly posted after the results had been analysed.

Measures (see Appendix 3).

Emotion Questionnaire: Part 1. The basic format of this questionnaire remained the same for all four emotions. Subjects were instructed to relax, and to try and remember the most recent time they had felt either love, hate, anger or jealousy (even if only mildly) for their partner. They were asked to recall as many details of the eliciting event as possible, and to answer the questions according to how they felt at the time, and not with respect to how they currently interpreted the event. Subjects were then asked open-ended questions about various aspects of the emotional experience: when the incident had happened; prior and post mood; details of the eliciting event; remembered cognitions, verbal expressions, physiological symptoms, urges, behaviours and control strategies, emotion duration, and partner reaction.

Part 2: Subjects then rated how intense the emotion had been on

a 6 pt. Likert scale (end pts. not at all and extremely), and completed a further 13 6 pt. Likert scale items measuring their appraisals of the eliciting event on the following dimensions: pleasantness, importance, expectedness, motivational consistency (was it good for your relationship?), certainty of understanding the event, amount of effort required to deal with the event, level of perceived obstacles, predictability of the event's course, responsibility for the event (credit for love, blame for the negative emotions), perceived amount of control over the event (self and partner), and the event's typicality. Subjects also rated the causal locus of the emotion (self, partner and circumstances), and rated the extent to which they believed the cause would be specific to that one situation (globality).

Coding of Free Response Protocols

Initially, each free response answer for the 15 questions was analysed and subcategorized into the classifications shown in Table 3. The aim was to construct a concise, informative coding scheme that would provide a useful number of discriminatory categories without being either under or over inclusive. Two coders then independently examined all 160 transcripts and categorized the replies according to the Coding Scheme.

A high level of interrater reliability (above 91%) was achieved over all the categories, including the moods and emotions coded according to the revised Emotion Coding Scheme (Fitness & Fletcher, 1990). Cognitions coding (positive or negative; self, partner, third party or relationship directed) achieved a very high level of reliability (96%). The least reliably coded categories pertained to type of event (91%). All disagreements were resolved in discussion.

Results[1]

Frequency and Intensity of Love, Hate, Anger and Jealousy in Subjects' Relationships

Table 2 displays the means and intercorrelations between emotion frequency and intensity for love, hate, anger and jealousy in subjects' marital relationships. Clearly, love was the most frequently experienced emotion, with anger following close behind. Jealousy and hate were the least frequently experienced emotions. With respect to intensity, the same order applied; thus, as would be expected, the correlations between reported frequency and intensity for the four emotions were all significant and positive.

Love, Hate, Anger and Jealousy Questionnaire Results

In general, subjects wrote richly detailed emotion accounts, including a wealth of unsolicited explanations and attributions for the causes of the emotion. The mean number of words over all four emotions was 340 (*sd* = 180), with hate accounts being the longest (*M* = 362.4 words, *sd* = 167.6), and anger accounts being the shortest (*M* = 226.8 words, *sd* = 148.5).

Intensity of Emotional Experience

Before investigating the emotion questionnaire data, I analysed emotion intensity to ensure it was uniform across the recalled love, hate, anger and jealousy experiences. In fact, all four emotions had been experienced at moderate to high levels of intensity, with means ranging from 4.3 to 4.9 (with 6 being the maximum possible intensity). The results of a one-way ANOVA showed no significant difference in intensity between the emotions. However, as might be expected, emotion intensity was positively related to emotion duration for all four emotions ($r = .29$, $p < .001$).

Table 2

Means and Intercorrelations Between Emotion Frequency and Intensity for Love, Hate, Anger and Jealousy (*n* = 160)

Emotion	Frequency Mean	SD	Intensity Mean	SD	*r*
Love	4.4	0.9	4.0	1.2	.62
Anger	2.9	0.8	2.6	1.1	.63
Jealousy	2.1	1.0	2.1	1.2	.71
Hate	1.6	0.8	1.6	1.1	.67

Note. Scale ranges were 1 – 6.

Emotion Profiles

Table 3 shows the percentage frequency of responses over the major question categories for the four emotions of love, hate, anger and jealousy. It should be noted that not every subject answered every question, and many subjects gave multiple answers that fell into two or more categories (except for discrete questions such as emotion duration, or eliciting event). Consequently, no attempt was made to make statistical comparisons between the emotion profiles, because the majority of categories failed to meet the assumptions for Chi Square analysis (no zero cell sizes or expected frequencies less than five). Nevertheless, as Table 3 illustrates, distinct patterns for each of the emotions were obtained.

Love profile. Recalled love events tended to have occurred very recently (72.5% within the past month). While most subjects reported feeling happy or relaxed before the incident, those subjects who reported feeling tense or anxious explained that they had been in some kind of trouble, and their partner had given them help and support to cope with it. For example, a 25 year old lab technician wrote this account:

> "An experiment had gone wrong at work and I didn't know what I was going to do next with my sample. I didn't want to confront the boss, and I worked myself up into a real state. I told my husband, who works in the same division, that I just didn't know what to do. He took control of the situation and made me feel a lot better about myself and my capabilities, and said he'd sort the problem out with my boss. I thought how special he was, that he understands me, knows what I am like, and is prepared to be there and help."

Table 3

Percentage Frequencies of Responses for Love, Hate, Anger and Jealousy

	Love	Hate	Anger	Jealousy
Time Ago				
1 - 7 days	45	22.5	42.5	-
1 - 4 weeks	27.5	7.5	25	15
1 - 6 months	17.5	27.5	15	32.5
7 - 12 months	-	12.5	7.5	10
1 - 2 years	2.5	12.5	-	10
Over 2 years	7.5	17.5	7.5	32.5
Prior Mood				
Excited, alert	-	-	-	27.5
Anxious	7.5	17.5	-	25
Tense, stressed	22.5	15	27.5	15
Happy	12.5	22.5	12.5	47.5
Calm, relaxed	52.5	30	45	22.5
Depressed	-	27.5	15	7.5
Event				
Thinking about partner	40	2.5	-	-
P. giving time, support	22.5	-	-	-
Sharing happy times	22.5	-	-	-
Giving to partner	15	-	-	-
Badly treated by p.	-	50	27.5	-
Humiliated by p.	-	15	5	-
Disgusted by p.	-	12.5	7.5	-
Infidelity	-	5	-	12.5
Treated unfairly by p.	-	10	47.5	-
P. caring for others	-	2.5	5	12.5
P. receiving benefits	-	-	5	12.5
Betrayed, lied to by p.	-	2.5	2.5	7.5
P. attn. to opp. sex	-	-	-	55
Cognitions				
Positive, self	50	27.5	7.5	5
Positive, partner	100	10	-	22.5
Positive, rel'ship	80	12.5	-	15
Negative, self	25	72.5	32.5	100
Negative, partner	-	100	100	100
Negative, rel'ship	10	35	10	15
Negative, 3rd party	-	-	-	60
Other emotions reported				
Frustration	-	15	7.5	5
Anxiety	-	12.5	5	20
Hurt	-	12.5	12.5	22.5
Happiness	22.5	-	-	-

Table 3 continued

Urges				
To be physically close	62.5	–	–	–
To express verbally	20	25	57.5	30
To leave situation	–	40	5	17.5
To take revenge	–	15	2.5	12.5
To physically hurt p.	–	12.5	7.5	2.5
To hurt third party	–	–	–	17.5
Not reported	17.5	17.5	27.5	20
Verbal Expression				
Sympathetic	62.5	–	–	–
Joking	5	–	–	10
Hostile Expression	–	35	47.5	22.5
Calm discussion	–	17.5	30	27.5
Say nothing	27.5	47.5	22.5	40
Physiological Symptoms				
Butterflies in stomach	25	–	–	–
Tight stomach	–	30	30	10
Sick stomach	–	17.5	–	47.5
Relaxed muscles	20	–	–	–
Tense muscles	7	50	70	47.5
Warmth or heat	20	–	22.5	–
Heart palpitations	10	–	–	–
Headache	–	12.5	10	–
Agitated, restless	–	12.5	12.5	22.5
No symptoms	35	15	12.5	15
Behaviour				
Hug, kiss	62.5	–	–	–
Give presents	25	–	–	–
Act coldly, withdraw	–	37.5	12.5	35
Yell, throw things	–	25	45	17.5
Worry, brood	–	10	5	22.5
Try to resolve	–	10	7.5	17.5
Walk out, leave	–	7.5	7.5	20
Physically hurt p.	–	2.5	–	–
Talk to friends	–	–	–	15
Behave as usual	–	27.5	22.5	17.5
Partner Reaction				
Loving, happy	92.5	–	–	52.5
Angry	–	32.5	35	10
Hurt	–	22.5	5	7.5
Surprised	–	12.5	–	17.5
Sorry, remorseful	–	–	15	–
Hateful	–	12.5	–	–

Table 3 continued

Duration				
Seconds, minutes	15	37.5	62.5	27.5
Hours	45	40	30	35
Days, weeks	40	22.5	5	35
Mood Afterwards				
Calm, relaxed	55	15	22.5	27.5
Happy, loving	50	22.5	-	50
Relieved	12.5	-	-	10
Hurt	-	22.5	20	-
Depressed	-	20	25	20
Anxious	-	10	-	7.5
Frustrated	-	5	17.5	7
Tense stressed	-	-	27.5	-
Control				
Yes	12.5	75	72.5	77.5
No	87.5	25	27.5	22.5
Reason for No Control				
Want partner to know	40	40	54	78
No reason to control	39	20	-	-
Too intense	6	20	36	22
Healthier to express	-	20	10	-
Reason for Control				
Destructive emotion	-	45	45	81
Others present	100	20	24	-
Always control feelings	-	10	10	-
Fear p's. reaction	-	-	18	19
Means of control				
Cognitive, reappraisal	40	43	45	55
Switching off, ignoring	20	17	24	19
Behavioural	40	30	24	26

Note. P. stands for partner.

Love events appear to have involved a good deal of positive thinking about the self, partner and relationship. These findings are consistent with the results of Shaver et al. (1987) and Fehr (1988), who found subjects in love to be obsessed with the thought of the loved one. Clearly, this kind of thinking is a potent elicitor of feelings of love. Subjects feeling love did not report any particular physiological symptoms with great frequency, although 25% mentioned having butterflies in the stomach. However, there was a definite action tendency, or urge to be physically close to their partners, an urge which Shaver et al. (1987) found distinguished the love prototype from joy. It is interesting to note the large proportion of subjects who claimed the emotion lasted for days (or even weeks); prototcol analysis indicated that while for some subjects this meant a literal awareness of the feeling of being "in love" over an extended period, for others it meant having a positive attitude towards the partner with a low level of affective arousal. As might be expected, most subjects expressed their feelings to their partners, whose reactions were overwhelmingly positive. Only five subjects made a conscious effort to control the expression of their emotion, because there were other people present and subjects felt expression would be inappropriate. The 35 subjects who did not try to control the expression of their emotion either wanted their partner to know how they felt, or could not see any good reason to control the emotion.

Hate profile. Naturally, remembered hate accounts contained a number of features that were the opposite of those reported in the love accounts, e. g. they tended to be less recent, (so presumably less frequent), and only one subject claimed that merely thinking

about their partner elicited hate. While half the subjects had been feeling happy or relaxed before the hate eliciting incident, some 32.5% felt stressed or anxious, and 27.5% felt depressed (a higher level than that recorded before the anger and jealousy incidents). In the main, subjects feeling hate tended to have been neglected, unsupported or badly treated by their partners. An example of being badly treated comes from a 22 year old married student, writing about an event that had occurred a year and a half previously:

> "I contracted a particularly nasty venereal infection from my partner. What made me feel hatred was the fact that my partner did not tell me there was any such danger, and if she had told me, then the whole incident could easily have been avoided. I felt she was only thinking of herself, and not also of me. I felt like I had been experimented on. She had put my health at risk without telling me."

Other examples included being ignored or not listened to, and incidents that made the subject feel alone and uncared for. The second most frequently reported hate eliciting event was being humiliated or embarrassed by the partner; when reported by women, such incidents were typically alcohol related and occurred at social gatherings, whereas men typically reported being embarrassed by their wife's "making a scene" in public.

Reported cognitions were almost exclusively negative about the partner, except for a few forgiving thoughts (e. g. "He's not always like this"). However, there was also a substantial percentage of self-related negative cognitions, e. g. "I knew I was handling it badly", and "I despised myself for being so weak". A few subjects had self-related positive cognitions (e. g. "I could find someone

better than this!"). The most frequently reported emotions other than hate were frustration, hurt and anxiety.

Although Davitz (1969) claimed the action tendency typical of hate involved moving against the other, the most usual urge in these accounts was to leave the situation and avoid the partner - the direct opposite of the action tendency for love (wanting to approach the partner). Only a few subjects wanted to take revenge (e. g. by getting back at their partner in some way), while an even smaller number expressed an urge to physically hurt the partner (e. g. to punch, hit or kick them). The desire to get away suggests hate involves an aversion response somewhat akin to disgust, which Oatley and Johnson-Laird (1987) hypothesize is closely related to hate. In accord with the urge to escape the situation, nearly half the subjects said nothing of their feelings to their partner, and a substantial number either pretended nothing was wrong and behaved as usual, or acted coldly and withdrew emotionally from their partners. In the main, the consequences of hate were destructive, with the most frequently reported partner reactions being anger and hurt. Hate also tended to last longer than anger.

Anger profile. Unlike the hate eliciting events, anger eliciting events tended to have occurred recently. Subjects were generally fairly relaxed or happy before the incident, though 27.5% reported feeling stressed. As other researchers have found (e. g. Averill, 1982; Scherer et al., 1986; Shaver et al., 1987), the most usual anger elicitor was the perception of having been treated unfairly, or unjustly. In general, these kinds of events were readily distinguishable from simply having been treated badly (which tended to elicit hate), although occasionally the difference was one of degree. For example, in one hate account the subject described an

incident where her husband had made jokes about her appearance. Although there was an element of unfairness in this insulting incident, the overwhelming perception appeared to be that he just "didn't care". Conversely, another subject was extremely angry because his wife refused to change her schedule so that he could have the car one particular evening, and a major factor in his anger was his perception that he always went "out of his way" to assist her, and consequently, he deserved better treatment. Another example comes from a 23 year old student in a de facto relationship, writing about an incident that had happened one week previously:

> "We were at a party having a good time, and mingling with everyone. I was sitting talking with two male friends, cramped on a chair. My partner later accused me of leading them on, as one guy had his arm around me. Being falsely accused made me angry; as there was no room to move, the action was harmless, as the guy had nowhere else to put his arm. I thought his accusation was ridiculous. It made me feel as if I had done something wrong, but why would I purposely try to hurt my partner like that?"

Other examples included subjects being blamed for accidents, being expected to do more than their fair share of chores, and not having an equal say in decision making. Physiologically, there were no major differences between hate and anger, except that anger involved more muscle tension and a feeling of being hot and bothered. However, an interesting contrast between the hate and anger accounts was that subjects tended to engage with their partners (albeit negatively) rather than withdraw from them in response to an anger eliciting event. Shaver et al. (1987) also

while only 14% brooded, or withdrew. Interestingly, however, while partners tended to be angry in return, this was the only emotion for which some partners expressed remorse or regret.

Jealousy profile. In general, jealousy eliciting incidents had not happened recently, with 42.5% having occurred over a year previously. Subjects appeared to be more aroused before the jealousy eliciting incident than with the other three emotions, feeling either excited, stressed or anxious. Most of the subjects who reported feeling excited also reported feeling happy, probably because the jealousy eliciting incident frequently happened at a pleasant social gathering, such as a party.

The most frequently reported jealousy eliciting event was not actual infidelity, but involved the partner paying attention, or giving time to a member of the opposite sex. This situation often elicited extreme jealousy when the third party was the partner's ex-spouse, as the following example from a 22 year old female in a de facto relationship illustrates:

> "My partner's ex-wife arrived in town and asked to meet him for a drink. She asked him to come back to her (as I suspected!), and he basically told her that things were definitely over. This did not prevent me feeling extremely upset and jealous. Firstly, because she thought she could contact him out of the blue. Secondly, she is attractive. Thirdly, because I will never know precisely what went through his mind while he talked to her. I felt he was disloyal. I knew she wanted him back, and I wondered what games she would play to attempt this. I felt very insecure".

Of all the four emotions, jealousy elicited the largest number of self-related negative cognitions, most of which involved self condemnation for being paranoid and insecure, or which entailed making invidious comparisons between the self and the third party. Many self-related cognitions were concerned with the assumed "inexcusability" of being jealous, e. g. "I'm being stupid", and "I'm a fool for not trusting her". Perhaps as a consequence of this, very few subjects expressed their feelings to their partners directly, despite a frequent desire to do so. Rather, they talked with friends, or withdrew emotionally and worried about the situation. Nevertheless, the fact that partner reactions tended to be positive meant that partners were catching on somehow to how their partners were feeling, and were clearly making an effort to reassure them. The majority of subjects felt sick with jealousy, and subjects also reported feeling hurt, anxiety and frustration. Nearly a third of subjects reported wanting to tell their partners how they felt, but only a few subjects reported wanting to take revenge on their partner or to physically hurt them. However, some 17.5% of subjects reported a desire to physically hurt the third party (e. g. "to rip his head off").

For all three negative emotions, the most popular control strategies were either cognitive (trying to think about something else, focusing on positive aspects of the partner, etc.), or behavioural (doing something else, distracting themselves in some way). Within the cognitive category, a surprising number of subjects explained in detail how they reappraised or reinterpreted a situation in order to feel differently about it. Clearly, a substantial number of laypeople have an intuitive understanding of the relationship between their thoughts and their emotions. However,

a good number of subjects also mentioned simply "switching off" their feelings, without describing their strategies. Given the similar percentages across emotions for each of these means of control, it appears that people may employ similar methods of emotion regulation, whatever the emotion happens to be.

Cognitive Appraisal Dimensions

Table 4 displays the mean appraisal ratings for love, hate, anger and jealousy. As expected, several sets of means showed significant differences: Love was the most pleasant emotion, and jealousy was the least pleasant; love was also rated as being the most beneficial to the relationship, while hate and anger were the least beneficial. Hate events had the least predictable course, while anger events were the most predictable; jealousy events were the hardest to understand, and love events were the easiest. Love events were also the least effortful and involved the fewest perceived obstacles, as opposed to hate events, and subjects reporting love and anger events perceived themselves to have more situational control than the jealousy or hate subjects. Love events were rated more highly than the other emotions on the role of the self in causing the emotion, while jealousy had the lowest partner cause and the highest external cause ratings. Jealousy was also rated as having the most situationally specific cause, while love was rated as having the most global cause; jealousy events were rated as the most atypical, while love events were considered the most global.

Looking at the three negative emotions only, there were five sets of significantly different appraisal means: Anger had the most predictable course, the lowest level of perceived obstacles, and the highest levels of self control, as opposed to hate events, and the

Table 4

Appraisal Dimension Means for Love, Hate, Anger and Jealousy

Appraisal	Love	Hate	Anger	Jealousy	F^a	F^b
Intense	4.9	4.4	4.3	4.7	2.4	1.1
Pleasant	5.4	1.9	2.1	1.7	132.9***	1.5
Important	4.7	4.7	4.5	4.4	.3	.3
Expected	3.5	3.9	3.3	3.6	.8	1.0
Beneficial	5.0	2.0	2.0	2.5	53.4***	1.9
Typical	4.8	3.6	4.2	3.5	6.6***	2.4
Predictable	4.0	3.1	4.3	3.8	4.4***	6.2***
Understand	4.8	4.3	4.6	3.9	3.3**	2.6
Effortful	2.5	4.5	4.1	4.4	15.2***	.7
Obstacles	2.3	4.5	3.5	3.8	15.4***	5.3***
Self resp.	3.1	2.7	2.5	2.2	2.2	1.1
Part. resp.	4.0	4.1	4.4	3.5	2.4	3.6*
Self control	3.5	2.1	3.3	2.2	9.9***	8.6***
Part. cont.	3.7	3.9	3.9	4.1	.6	.2
Self cause	4.5	3.2	3.4	3.4	5.9***	.3
Part. cause	4.9	4.0	4.5	3.7	6.6***	3.4*
Ext. cause	3.2	4.0	3.9	4.4	3.1*	1.0
Specific	2.5	3.9	4.0	4.1	10.5***	.2

Note. The F^a ratio is derived from a One-way ANOVA across all four emotions. The F^b ratio is derived from the same analysis but across the three negative emotions only (hate, anger and jealousy).

* $p<.05$

** $p<.01$

*** $p<.001$

partner being rated as the cause of an emotion as well as being to blame for the eliciting event was highest for anger, and lowest on both dimensions for jealousy.

Discriminant Function Analysis of Cognitive Appraisal Items for Love, Hate, Anger and jealousy

Initially, a discriminant function analysis was performed to assess predictability of membership in all four emotion categories from a combination of cognitive appraisal dimensions items. As expected, the first discriminant function separating love from the negative emotions was highly significant, χ^2 (57, n = 160) = 316.54, $p<.001$. In order to elucidate the results with respect to the negative emotions, a further discriminant analysis was performed to assess predictability of membership in the hate, anger and jealousy emotion categories from a combination of appraisal dimension items (see Figure 1). Both discriminant functions (two being the maximum possible number given three target categories) were statistically significant, with a combined χ^2 (38, n = 120) = 72.78, $p<.001$. The first function accounted for 61.3% of between groups variability, and discriminated between jealousy and hate/anger. With the first function removed, χ^2 (18, n = 120) = 29.3, $p<.05$. The second function accounted for 38.6% of the between groups variability and discriminated between hate and anger. Correlations of the 18 predictor variables with the discriminant functions showed jealousy was positively related to low partner responsibility for the event (r = .35), the partner not being the cause of the emotion (r = .31), and the event being hard to understand (r = .29); hate was positively related to the event's course being perceived as unpredictable (r = .58), with low self control (r = .56) and a high level of perceived obstacles (r = .54).

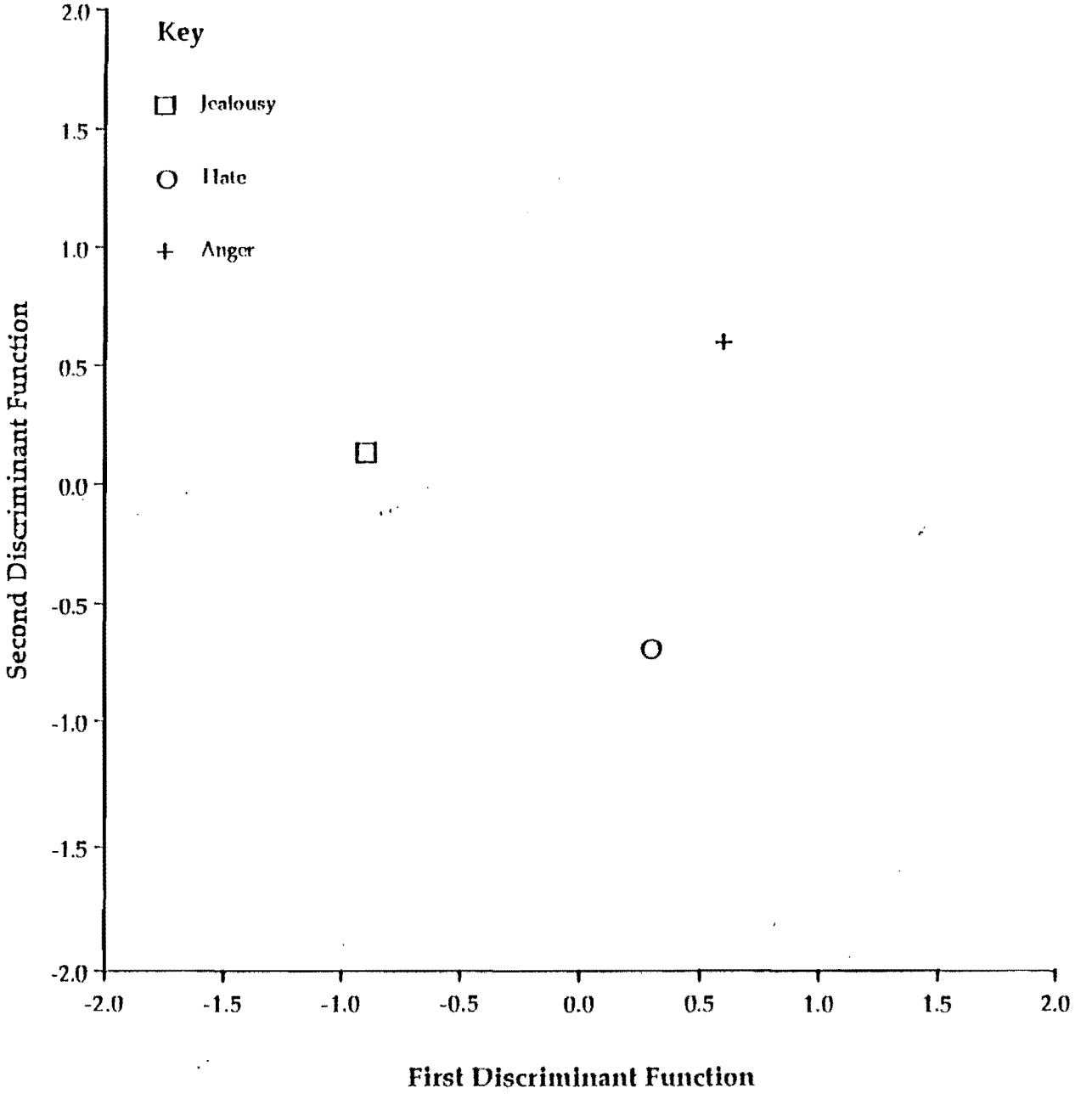

Figure 1. Plot of three group centroids on two discriminant functions derived from cognitive appraisal variables in Study 1.

Summary of Cognitive Appraisal Results

These results allow us to add a cognitive dimension to the four emotion prototypes (see Table 5 for a summary of emotion prototype features).

Love. As expected, and in accord with Ellsworth & Smith (1988b), love eliciting events were appraised as pleasant, important, and involving little effort; subjects tended to credit their partners for the event. However, credit for the event was not rated in the same way as the perceived cause of this emotion, for which subjects rated themselves as highly as their partners. These causes were also rated as global, suggesting that subjects believed there are non-situationally specific qualities, internal to both the subject and his or her partner, that cause feelings of love. Other important appraisal dimensions were the ease of understanding the eliciting event, its benefit to the relationship, its typicality and predictability of course. Given the high proportion of subjects who felt calm and relaxed before the eliciting event, the results suggest that the typical love eliciting event for married subjects is neither very unexpected nor perhaps exciting. Even so, the love felt is intense and pleasureable, confirming Berscheid's (1983) speculation that such love eliciting events are the "staff of life for many satisfying long-term close relationships." (p. 156).

Hate. Appraisals of hate eliciting events were the opposite to those for love events, in that they were appraised as unpleasant, effortful and involving a high level of perceived obstacles; their course was unpredictable and subjects felt low levels of self control. Along with this, a very high proportion of subjects thought negatively about themselves during the incident, either believing they deserved such bad treatment, or blaming themselves for putting

up with the situation (as noted by Davitz, 1969). This does not mean that subjects necessarily blamed themselves for the eliciting event, however, since the mean self blame rating on the appraisal dimensions was low.

Anger. Appraisals of anger events differed from hate events on a number of dimensions, e. g. anger events were appraised as typical and easy to understand; their course was predictable, the partner was to blame, and the emotion itself was very much partner caused. Perhaps the typicality and predictability aspects reflect the familiarity people have with an anger script, or prototype, given that it is a very commonly experienced emotion both inside and outside close relationships (Averill, 1982). It is also interesting to note that while Ellsworth & Smith (1988a) found appraisals of high perceived obstacles and other agency typified anger, subjects in this study rated their appraisals on the perceived obstacle dimension as lower for anger than for hate or jealousy, although emotion intensity was comparable for all three emotions.

Jealousy. The key appraisals for jealousy appear to be related to the uncertainty and difficulty of understanding the situation, presumably because it is not typical (although Buunk & Bringle, 1987, speculated that an atypical, situationally specific event should reduce, rather than elicit, jealousy). The cause of jealousy is believed to be external (i. e. the third party), and situationally specific, but the partner is perceived to have a good deal of control over the situation (as opposed to the self). This idea was often expressed in the protocols with remarks like "she was throwing herself all over him, but he just sat there, lapping it up", and "this guy was coming on strong at work, and she said she wasn't interested, but she still stayed late at the office for

drinks on Friday night."

Discussion

The results of the emotion prototype and cognitive appraisal analyses show that four distinctive profiles can be assembled, representing some basic, or prototypical, knowledge structures about love, hate, anger and jealousy. In particular, differences in cognitive appraisal patterns between the three negative emotions were striking, and suggest that even closely related emotions can be teased apart on the basis of such knowledge structures.

With respect to prototypical features, the findings for anger were in general accord with the results of previous research (e. g. Averill, 1982; Scherer et al., 1986; Shaver et al., 1987), particularly with respect to typical duration and physiological symptoms. Similarly with love, for which the prototype profile coincides closely with the results of Shaver et al. (1987) and Fehr (1988). However, studying these emotions, along with hate and jealousy, from within a marital context allows a more detailed understanding of their nature and course than hitherto provided.

For example, on the basis of these findings it is possible to predict that lettings one's partner down, bullying or humiliating them, is more likely to elicit hate than anger; that it is possible to feel an emotion of love for your partner simply by thinking about their virtues when you are in a peaceful mood; and that having your partner merely pay attention to a member of the opposite sex is a potent elicitor of jealousy, no matter how blameless your partner's attentions. Similarly, it is possible to predict that hate is more likely to be elicited than anger when a person is feeling depressed (perhaps contributing to the perception of low control), and that a person feeling hate for their partner also tends to think badly of

themselves. To summarize, this research has provided a clearer and more elaborate picture of the kinds of events that precipitate these emotions within close relationships: how they feel, what kinds of cognitions tend to accompany them, how they are usually expressed, and why, and what their perceived consequences are. The extent to which the findings of the present study can be applied to other relationship settings (e. g. between parent and child) or generalized to wider contexts (e. g. the study of racial hate) remains to be determined. However, the present research suggests that while emotion prototypes share some basic features across settings, they also display some interesting and theoretically important differences in detail.

Study 2

The emotion accounts in Study 1 were based on real, recalled incidents in married people's relationships. However, if prototype theory is correct, then our subjects would have drawn upon their emotion prototype knowledge in order to store and recall their emotion experiences. Presumably, then, the same knowledge structures would be accessed when imagining a prototypical emotion incident in the life of a hypothetical married couple. If this is the case, then the prototype features obtained from both kinds of account should be similar, even taking into account the larger number of detailed and idiosyncratic details likely to be present in the recalled accounts.

I tested this hypothesis in Study 2 by having another group of married subjects write hypothetical accounts of stereotypical love, hate, anger and jealousy incidents in marriage, and comparing the prototypes with those obtained from the first study. However, since subjects were to be required to imagine a typical event, rather than a real incident from their own relationship, it was not practical to investigate detailed appraisal patterns in this study. Similarly, several categories from Study 1 such as prior mood, and reasons for controlling the emotion, were omitted, because it was thought their inclusion might unduly encourage subjects to focus on an actual event from their own relationship.

Another rationale for this study was to assess the extent to which the results from Study 1 may have been influenced by social desirability factors. Emotions like anger, hate and jealousy tend to be disapproved of in Western society and considered destructive (Sommers, 1984). Accordingly, discussing their memories of these emotions may have been an uncomfortable experience for some of our subjects. For example, despite McKellar's (1950) finding that the

majority of hostile subjects want to take revenge and hurt the hated party, only 27.5% of our subejcts claimed to have wanted either of these things, and only 2.5% responded by physically hurting their partners. Perhaps within close relationships, hate is experienced somewhat differently to the predominantly bullying episodes recalled by McKellar's subjects, or it may be that subjects simply did not want to admit they had experienced such urges, or behaved in such a way. Thus, the second aim in obtaining typical accounts of the features of love, hate, anger and jealousy episodes in marriage was to compare the two kinds of accounts for differences and similarities, specifically with respect to urges and behaviours.

Method

Subjects

Eighty married subjects participated in this study, 40 men and 40 women. The mean age of the sample was 39 years (sd = 9.9) and the mean relationship length was 13 years (sd = 9.1 years); a similar profile to that for Study 1. Forty of the respondents completed their questionnaires in the laboratory, and took another questionnaire home for their partner to complete. This questionnaire was completed at home in private and posted back to the University in a stamped, self addressed envelope. The return rate for these questionnaires was good (77%). The final sample comprised 34 University students, with the remainder recruited from the wider community through friends and relations. Differences in age and account length between the two kinds of sample (laboratory and postal) were not significant.

Procedure and Measures

Subjects were given a brief overview of the tasks they were to complete, and an assurance about the confidentiality of their data.

Forty subjects were given a questionnaire which asked them to forget about their own relationship specifically, and to simply give their opinion about the whys and wherefores, within the context of a marital relationship, of three common emotions: love, hate and jealousy. However, because I decided to obtain hypothetical anger accounts after the experiment was nearly finished, the remaining 40 subjects gave their opinion about the experience of anger only. Thus, as with Study 1, there were 40 hypothetical accounts for each emotion.

Hypothetical Emotion Questionnaire (Appendix 5). The format of this questionnaire remained the same for all four emotions. Subjects were instructed to write about the most typical kind of incident they believed would make one partner feel love (not lust), hate, anger or jealousy toward the other in a marital relationship. A series of open-ended questions followed, inquiring about probable physiological symptoms, urges, cognitions, likelihood of emotional expression, and how the emotion would probably be expressed.

Coding

Two coders independently coded the 80 transcripts, using the Coding Scheme described in Study 1. As with Study 1, a high level of interrater reliability was achieved, ranging from 92% (for event category) to 100% (for other emotions mentioned).

Results

The purpose of this study was to obtain a number of hypothetical emotion accounts for love, hate, anger and jealousy from people involved in marital relationships, and to compare these accounts with the results from the first study. The second column of Table 5 shows the percentage of responses for the major question categories for the four emotions. As with the results from Study 1,

Table 5

Summary of Prototypical Emotion Features for Recalled and Hypothetical Accounts

Emotion Feature	Proportion of Subjects		
	Recalled (n = 40)	Hypothetical (n = 40)	Difference
Love			
Recent (within 1 month)	72.5	–	–
Elicited by: Thinking about p.	40	10	-30
P. gives time etc.	22.5	67.5	-45*
Share happy times	22.5	20	-02.5
Feel: Calm, peaceful	52.5	25	27.5
Urge: To be close	62.5	92.5	-30
To say "I love you"	20	15	5
Butterflies in stomach	25	12.5	12.5
Feeling of inner warmth	20	32.5	-12.5
Relaxed muscles	20	27.	-07.5
Positive cognitions, self	50	32.5	17.5
Positive cognitions, partner	100	80	20
Behaviour: Say "I love you"	62.5	62.5	–
Say nothing	27.5	37.5	-10
Hug, kiss partner	67.5	87.5	-20
Give presents	25	10	15
Partner reaction: Loving	92.5	–	–
Attempt to control feelings	12.5	5	7.5
Hate			
Elicited by: Badly treated	50	30	-20
Betrayed, lied to	2.5	27.5	-25
Infidelity	5	17.5	-12.5
Humiliation	15	7.5	7.5
Feel: Depressed	27.5	–	–
Urge: To leave situation	40	42.5	-02.5
To hurt partner	12.5	55	-42.5*
To take revenge	15	40	-25
To say "I hate you"	25	15	10
Tight stomach	30	50	-20
Tense muscles	50	50	–
Negative cognitions, self	72.5	20	52.5*
Negative cognitions, partner	100	80	20
Behaviour: Say "I hate you"	35	55	-20
Say nothing	47.5	40	-07.5
Act coldly, withdraw	37.5	40	-02.5
Behave as usual	27.5	10	17.5
Hurt partner	2.5	42.5	-40.5*
Yell, throw things	25	20	05
Partner reaction: Angry	32.5	–	–
Hurt	22.5	–	–
Attempt to control feelings	75	40	-35*

Table 4 continued

Anger

Recent (within 1 month)		67.5	-	-
Elicited by:	Unfair treatment	47.5	60	-12.5
	Badly treated	27.5	10	-17.5
Feel:	Hurt	12.5	10	02.5
	Frustrated	7.5	15	-07.5
Urge:	To yell, shout	57.5	62.5	-05
	To take revenge	2.5	27.5	-25
	To hurt partner	7.5	17.5	-10
Tense muscles		70	62.5	07.5
Hot and bothered		22.5	30	-07.5
Tight stomach		30	32.5	-02.5
Negative cognitions, self		32.5	12.5	20
Negative cognitions, partner		100	80	20
Behaviour:	Yell, shout	47.5	62.5	-15
	Say nothing	22.5	30	-07.5
	Stamp, throw things	45	57.5	-12.5
	Act cold, withdraw	12.5	22.5	-10
	Behave as usual	22.5	-	-
Partner reaction:	Angry	35	-	-
	Sorry	15	-	-
Attempt to control feelings		72.5	25	47.5*

Jealousy

Elicited by:	Attn. to opp. sex	55	55	-
	Infidelity	12.5	15	-02.5
Feel:	Hurt	22.5	15	7.5
	Anxious	20	10	10
Urge:	To explain feelings	30	35	-05
	To take revenge	12.5	32.5	-20
	To hurt partner	2.5	22.5	-20
	To leave situation	12.5	20	-07.5
	To hurt third party	17.5	20	-02.5
Feel sick		47.5	37.5	10
Tense muscles		47.5	67.5	-20
Agitated, restless		22.5	-	-
Negative cognitions, self		100	65	35
Negative cognitions, partner		100	80	20
Negative cognitions, 3rd party		60	35	25
Behaviour:	Express feelings	22.5	47.5	-25
	Calm discussion	27.5	15	12.5
	Say nothing	40	32.5	07.5
	Act cold, withdraw	35	45	-10
	Worry, brood	22.5	2.5	20
	Yell, throw things	17.5	20	-02.5
	Behave as usual	17.5	12.5	05
Partner reaction:	Loving, happy	52.5	-	-
	Surprised	17.5	-	-
Attempt to control feelings:		77.5	30	47.5*

Note> Chi square tests were calculated across the two groups whose cell means were both >0 and expected cell frequencies were >5. Significant Chi squares at the $p < .001$ level are marked with an asterisk.

it should be noted that not every subject answered every question, and many subjects gave multiple answers that fell into two or more categories.

Comparison Between Recall and Hypothetical Accounts

Love. In the main, recall and hypothetical accounts of love were more similar than dissimilar. Nearly the same proportions of subjects reported that sharing happy times would elicit love, that subjects would have an urge to tell their partners they love them and would act on the urge, that subjects would not try to control their feelings, and would feel warm and relaxed. However, as expected, recall accounts comprised some idiosyncratic features, e. g. very few hypothetical accounts included "thinking about the partner" as a love eliciting event; rather, they more often included one partner feeling love when the other was attentive or supportive in some way. Similarly, although most hypothetical accounts stated the loving person would both have an urge to hug and kiss the partner, and would actually do so, many recall subjects were either constrained from doing this, or chose to give something to their partner instead.

Hate. The two kinds of hate accounts shared a number of features, in particular the urge to leave the situation, the cold behaviour, and the physiological symptoms. However, there were a number of dissimilarities, including type of eliciting event (with more hypothetical accounts mentioning infidelity and betrayal than recall accounts), urges to take revenge or physically hurt the partner and actually doing so (very common in the hypothetical accounts), and trying to control the expression of the emotion (75% of the recall accounts described control strategies, compared with only 40% of the recall accounts).

Anger. For both hypothetical and recall accounts, anger in marriage was most often elicited by one partner treating the other one unfairly. Symptoms included a tight stomach, feelings of being hot and bothered, tension, and yelling at the partner. However, as with hate, hypothetical accounts included an urge to physically hurt the partner or take revenge more often than recall accounts, although very few hypothetical accounts stated this would actually happen.

Jealousy. Similarities between the recall and hypothetical accounts of jealousy were striking, and included type of eliciting event (one partner paying attention to a member of the opposite sex), urges to express feelings and hurt the third party, feeling sick, saying nothing, acting coldly and behaving as usual. However, hypothetical accounts contained no positive cognitions and fewer negative self cognitions than recall accounts, were more likely to mention the urge for revenge or to physically hurt the partner (although not as much as in the hate accounts), and were more likely to mention that jealous spouses would express their feelings to their partners than recall subjects.

Discussion

In general, there were few major differences between the recall and the hypothetical accounts, and it seems possible that some of the differences obtained may be related to subjects' wishes to present themselves favourably in the recall condition of Study 1. For example, the higher frequency of physically violent urges and behaviours for the three negative emotions in the hypothetical accounts, compared to the recall accounts, may be a function of subjects' unwillingness to report such urges and behaviours in Study 1.

Another explanation for the differences in the two accounts is related to the privileged access one has to one's own desires, thoughts and intentions (Schwartz & Shaver, 1987). For example, the recall accounts, compared to the hypothetical accounts, included thinking about the partner as a potent elicitor of love, and comprised a greater diversity of cognitions for hate and jealousy. In addition, efforts to control the negative emotions were much more prevalent in the recall than in the hypothetical accounts. Such self-control efforts are probably invisible to an observer.

Perhaps also self-control strategies (which tended to be cognitive in nature) involve ignoring or re-interpreting destructive urges for the sake of maintaining harmony in the relationship. Thus, rather than being a function of social desirability factors, it may be that the lower frequency of violent urges and behaviours in the recall accounts, compared to the hypothetical accounts, constituted, in part, a faithful representation of actual incidents. Accordingly, the hypothetical account subjects may have been drawing on emotion knowledge structures of typical hate, anger and jealousy incidents, without taking into account the efforts of spouses to ameliorate the destructiveness of the situation.

In general, however, the number of broad similarities obtained between the two studies supports the view that the prototypical features of the four emotions represent stored emotion knowledge structures.

Study 3

The major focus of Study 3 concerned the influence of causal locus on the self-attribution of emotion. The reason for further investigating this issue relates to the coding of emotion-eliciting events in Study 1. Examining the event categories in Table 2, it is apparent that in many cases, the four emotions typically feature either the self, the partner, or some external (third party) circumstance as the major eliciting factor. For example, love was most typically elicited by the self thinking about the partner, whereas hate and anger were almost always elicited by a partner-caused event (e. g. being treated badly, or unfairly, by them). Jealousy events were typically elicited by an external or third-party cause (e. g. the partner paying attention to a member of the opposite sex).

Theoretically, this finding was not entirely unexpected, given the important role of causal locus in attributional accounts of emotion (e. g. Weiner, 1985). Weiner proposes that following an initial appraisal of an event as positive or negative, people undertake a causal search to determine the cause of the event and to assign responsibility for it. The result of this causal search is supposed to determine the specific emotional reaction. For example, if an individual attributes the cause of their partner's critical remark to something internal to the partner rather than to themselves (i. e. the remark was undeserved), then anger is likely to be self-attributed.

The importance of causal or responsibility locus on emotion labelling was confirmed by four exploratory factor analyses which were conducted on the cognitive appraisal results for each emotion from Study 1.[2] The results of these factor analyses must be regarded

as purely provisional and suggestive, because of the low sample size in each analysis (n = 40). Nonetheless, in accord with the findings noted previously for the emotion-eliciting events, important causal or responsibility locus factors, among other factors, were obtained for each emotion: specifically, a self-cause appraisal factor was obtained for love, a partner-cause/blame factor was obtained for hate and anger, and an external-cause factor was obtained for jealousy. (For a summary of these results, see Appendix 6).

One possible interpretation of these results is that the perceived causal locus of an emotion-eliciting event may be more important than the actual event (aside from its valence) in determining emotion outcomes. Hence, the differences obtained in Study 1 among the cognitive appraisal patterns for the four emotions might be more a function of perceived causal locus, than a function of the emotions themselves.

To investigate this issue, subjects involved in close relationships completed a questionnaire which required them to imagine a particular kind of emotion-eliciting event occurring in their own relationships. Subjects were told to imagine feeling either love, hate, anger or jealousy toward their partner, and that the cause of the emotion was either something to do with themselves, their partner, or an external factor. Subjects then completed the same list of cognitive appraisal dimension measures that was used in Study 1. The main purpose of this exercise was to test whether the perceived causal locus of the emotion would lead to significantly different cognitive appraisal patterns within the four emotions.

A second aim of this study was to assess whether the cognitive appraisal results from Study 1 would be replicated with the more pallid, hypothetical-event approach used in this study.

Method

Subjects

Two hundred and sixteen Psychology students, currently involved in a close relationship, completed a 15 minute questionnaire during their laboratory class time. The mean age of the sample was 21.17 years (*sd* = 5.9).

Procedure (see Appendix 7).

Subjects were instructed to imagine that they were experiencing either love, hate, anger or jealousy toward their partner in their own relationships. They were told that the reason they were feeling the emotion, or the cause of it, was something to do either with themselves, their partner, or something external (12 conditions, 18 subjects in each group). A couple of examples were provided for each condition, e. g. "Your partner may be flirting openly with one of your friends" (Jealousy, Partner cause), or "You believe your partner's family is taking up too much of his or her time" (Anger, External cause). Subjects then wrote about the kind of event they had imagined, in order to enhance their concentration on the task.

Finally, subjects answered 14 6 pt. Likert appraisal scales. These related to a) the imagined pleasantness of the event, b) its importance to the relationship, c) subjects' certainty of understanding the event, d) the amount of effort required to deal with the event, e) the level of perceived obstacles associated with the event, f) the event's expectedness, g) the event's typicality, h) the predictability of the event's course, i) the amount of perceived control in the situation (self and partner), j) the perceived cause of the emotion (a manipulation check: partner, self or external factors), and k) the specificity of the cause. Subjects also rated the intensity of the emotion.

Results

Manipulation Check

Table 6 shows the mean appraisal scores for external, partner and self-caused emotion ratings over the 12 conditions. The results of a series of Oneway ANOVAs showed that for each of the four emotions, mean external, partner and self-cause appraisal ratings were significantly higher in the matching experimental condition than in the other two conditions (all $Fs > 10.2$). These results show that subjects were following the instructions closely.

Discriminant Function Analyses for Love, Hate, Anger and Jealousy

The first aim was to test whether the cognitive appraisal patterns for each emotion were substantially altered by the manipulation of causal locus. To accomplish this, four discriminant function analyses were performed separately for love, hate, anger and jealousy, to assess whether different cognitive appraisal patterns were associated with the three causal categories (self, partner and external locus). The three causal locus items, used as manipulation checks, were deleted from each analysis. Non-significant discriminant functions were obtained for love, anger and jealousy, indicating that the appraisal patterns for these emotions do not differ according to the causal locus of the emotion. However, one significant discriminant function was obtained for hate, χ^2 (24, $n = 54$) = 40.8, $p<.01$. This function accounted for 64.5% of the between groups variability, and discriminated between partner-caused hate, and self/externally-caused hate. Correlations of the 12 predictor variables with the discriminant function showed that the best discriminators between partner-caused hate and self/externally-caused hate were greater intensity ($r = .59$) and partner control ($r = .35$) for partner-caused hate.

Table 6

Mean Appraisal Ratings for External, Partner and Self-Cause Across the 12 Emotion Conditions

Emotion Condition	External cause rating	Partner cause rating	Self cause rating
Love, external	5.0	3.3	3.4
Love partner	2.5	4.8	2.5
Love, self	2.8	3.6	4.8
Hate, external	5.2	3.1	3.3
Hate, partner	2.9	5.4	2.5
Hate, self	3.0	2.3	5.1
Anger, external	5.4	3.0	3.0
Anger, partner	2.8	5.3	1.9
Anger, self	3.0	2.2	5.3
Jealousy, external	5.7	3.0	2.7
Jealousy, partner	2.7	5.0	2.6
Jealousy, self	2.5	2.0	5.2

Discriminant Function Analyses for Hate, Anger and Jealousy

As causal locus, by and large, did not covary with the appraisal dimensions, the causal locus groups were collapsed. These data were then examined to determine if they replicated the cognitive appraisal results of Study 1. A discriminant function analysis was conducted on all four emotions, including love. As expected, and in accord with the results of Study 1, the first discriminant function separating love from the negative emotions was highly significant, $\underline{x}^2$ (45, n = 216) = 346.5, $\underline{p}<.001$.

A second discriminant function analysis was performed to assess predictability of membership in the three negative emotion categories (omitting love) from a combination of the appraisal dimension items. The first discriminant function was statistically significant, $\underline{x}^2$ (30, n = 162) = 50.4, $\underline{p}<.01$, and accounted for 75.12% of between-groups variability. As in Study 1, this function discriminated between hate and jealousy/anger. The second discriminant function was not significant. However, the overall pattern of results was similar to Study 1 (see Figure 2).

Generally replicating the first study, correlations of the 15 predictor variables with the first discriminant function showed hate was associated with low intensity ($\underline{r}$ = .50), a high level of perceived obstacles ($\underline{r}$ = .25), relationship importance ($\underline{r}$ = .22), and a situationally-specific cause ($\underline{r}$ = .22).

Discussion

The results of this study demonstrate that differences in the perceived causes for love, anger and jealousy, did not produce significantly different cognitive appraisal patterns within the three emotions. Interestingly, however, hate differed from the other three emotions, in that partner-caused hate was discriminated from

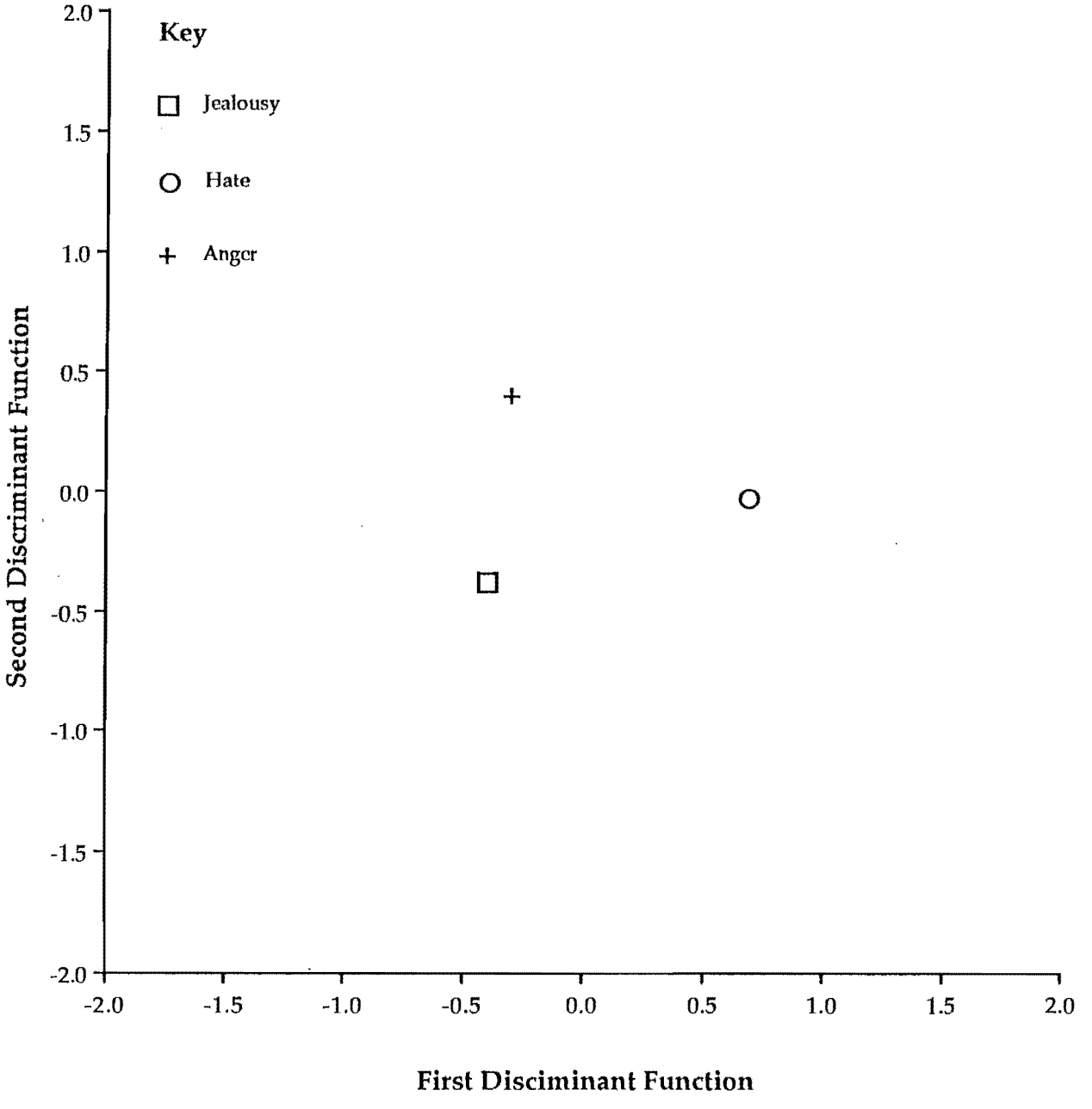

Figure 2. Plot of three group centroids on two discriminant functions derived from cognitive appraisal variables in Study 3.

externally and self-caused hate, on the basis of a different cognitive appraisal pattern. Even so, the results were easily interpretable, in that partner-caused hate was simply rated as more intense and partner-controlled than self or externally-caused hate.

These results indicate that although perceived causal locus is an important element in the elicitation of emotions like love, hate, anger and jealousy, locus alone is not responsible for the differences in cognitive appraisal patterns across emotions. Rather, the differences obtained appeared to be a function of sets of appraisal patterns, other than locus. This suggests that Weiner's (1985) causal attribution model of emotion might acquire more predictive and explanatory power, if it were incorporated within a more elaborate and thorough-going cognitive appraisal model.

When the three causal categories for each emotion were combined, the cognitive appraisal patterns for hate, along with the patterns for love, anger and jealousy, were similar to those obtained in the first study, although somewhat weaker. This is not surprising, given the hypothetical nature of the task, and the fact that causal locus, which <u>is</u> an important appraisal dimension, was controlled for. Nonetheless, the results provide converging evidence that the cognitive appraisal dimensions uncovered in Study 1 represent stored knowledge structures about emotion eliciting events in the context of marriage.

Study 4

The final study was concerned with further testing the validity of the results in Study 1. The premise was that if the results of Study 1 were valid, and represented the layperson's knowledge structures or scripts of love, hate, anger and jealousy in close relationships, then it should be possible for an ordinary person, whether in a close relationship or not, to accurately select an emotion on the basis of the prototypical and cognitive appraisal information obtained in Study 1.

The methodology involved flipping the procedure of Study 1 by assessing whether subjects could correctly identify an emotion based on the relevant prototype and/or appraisal information. I selected two events representative of each emotion from the first study, and presented them to groups of subjects either simply a) as events, b) as events with relevant prototypical features, c) as events with relevant cognitive appraisal dimensions, or d) as events with relevant prototype and cognitive appraisal information. All four groups had to select the correct emotion from a list of four positive (liking/love, happiness, pride and relief), and four negative (dislike/hate, anger, jealousy, worry) emotions.

By setting up the study in this way, it was also possible to assess the relative importance of cognitive appraisal versus prototype information in identifying emotions. In particular, I was interested to see if hate would be reliably discriminated from anger, and love from happiness (and on the basis of what kind of information), given that the status of love and hate as discrete emotions is by no means clear (Frijda, 1986; Kemper, 1987).

It was predicted that subjects would achieve the lowest identification rates when presented with an event alone, and the

highest rates when presented with an event plus all the relevant information. A final, exploratory issue concerned whether some emotions would be more readily identified than others, irrespective of the kind of information provided. No predictions were advanced concerning this question.

Method

Subjects

One hundred students from the University of Canterbury (54 males and 46 females) were recruited for this study.

Procedure

Subjects were told the purpose of the study was to discover how well people could predict other people's emotions. Subjects read 8 short, descriptive passages, and chose from a list of 8 emotions the particular emotion they thought the character in the story was most probably feeling.

Measures

There were four kinds of questionnaire distributed (for four groups of 25 subjects), each containing 8 descriptive passages accompanied by the same list of 8 emotions: dislike/hate, anger, jealousy, worry, liking/love, happiness, pride and relief. Pride, happiness, relief and worry functioned as filler emotions. Thus, each target emotion (love, hate, anger and jealousy) was represented by two events for each subject in each experimental condition. The 8 events were the same across all questionnaires, but the amount of accompanying information differed depending on the experimental condition. The events were derived from the prototypical emotion eliciting events described in Study 1 for each of the four emotions, but expressed in a relatively ambiguous form.

Condition 1 - Event Description Only

Hate events:

a) Kate and Richard are out together shopping. Kate tries on a pair of shorts and Richard passes a remark about her appearance. What is Kate feeling?

b) Bob and Louise are hosting a dinner party. While he is in the kitchen, Bob overhears Louise giving her opinion of his cooking to the guests. What is Bob feeling?

Jealousy events:

a) Ken confides to Marie that a woman has been pestering him at work and insisting on telling him her problems. What is Marie feeling?

b) Rob does not enjoy squash, so Wendy decides to play with a work colleague. What is Rob feeling?

Love events:

a) Patricia and Derek are on holiday together. Patricia goes way over budget when she buys Derek an expensive piece of pottery. What is Derek feeling?

b) Catherine and Phillip were not planning to start a family for a few more years. However, Catherine informs Phillip one evening that she is pregnant. Phillip reacts positively. What is Catherine feeling?

Anger events:

a) Colin has been away at a conference all week. When he comes back, he finds Jill has had the lounge professionally redecorated. What is Colin feeling?

b) Moira and Doug are going through the bills together. Doug remarks on their current state of finances. What is Moira feeling?

Condition 2 - Cognitive Appraisal

In this condition, event descriptions were combined with five different appraisal dimensions, selected for each emotion on the basis of the results of Study 1. These dimensions were then elaborated into a story-like format. For love, the selected appraisal dimensions were "typical", "partner caused", "global", "understandable", and "predictable", e. g.:

> Patricia and Derek are on holiday together. Patricia goes way over budget when she buys Derek an expensive piece of pottery. Derek isn't at all surprised, for he believes it is typical of Patricia to do things like this. After all, she is a very generous person. Derek finds her behaviour easy to understand and predictable.

For the two hate events, the relevant dimensions were "expected", "perceived obstacles", "effort required", "unpredictable course" and "low self control", e. g.:

> Kate and Richard are out together shopping. Kate tries on a pair of shorts and Richard passes a remark about her appearance. Kate doesn't find Richard's remark very surprising, but it makes her even more aware of how difficult it is to get the kind of caring she needs and wants from Richard. Kate has to make a real effort to deal with the situation. She feels she cannot predict what will happen next, and wishes she felt more in control.

For the two anger events, the relevant dimensions were "unexpected", "predictable", "typical", "understandable" and "partner responsible", e. g.:

> Colin has been away at a conference all week. When he comes back, he finds Jill has had the lounge professionally redecorated. Although Jill's behaviour initially takes Colin by surprise, he knows what will happen when they discuss the matter - after all, they often disagree about his skills as a "handyman". He understands why Jill has done it, but believes she is wrong to do something so drastic without consulting him first. He thinks the whole situation is entirely her fault.

For the two jealousy events, the relevant dimensions were: "low partner responsibility", "externally caused", "hard to understand", "high partner control", and "situationally specific cause", e. g.:

> Ken confides to Marie that a woman has been pestering him at work and insisting on telling him her problems. Marie knows it's not Ken's fault that this woman is pestering him, but she finds it hard to understand why he chooses to spend time with her. It's not like Ken to act this way.

Condition 3 - Symptoms, Urges and Behaviours

In this condition, event descriptions were combined with information about the physiological symptoms, urges and behaviours of the character experiencing the emotion. Two symptoms, one urge and two behaviours for each emotion were selected on the basis of the results in Study 1. These features were then elaborated into a story-like format. For the two love events, the selected symptoms were "warmth" and "relaxed muscles", the urge was "to be physically close", and the behaviours were "expressing feelings verbally" and "being physically close", e. g.:

> Catherine and Phillip were not planning to start a family for a few more years. Catherine informs Phillip one evening that she is pregnant. Phillip reacts positively. Catherine feels warm and relaxed, and has an urge to be physically close to Phillip. She tells him how she feels and gives him a hug.

For the two hate events, the selected symptoms were "muscle tension" and "tight stomach", the urge was "to leave the situation", and the behaviours were "act coldly, withdraw emotionally" and "behave as usual", e. g.:

> Bob and Louise are hosting a dinner party. While he is in the kitchen, Bob overhears Louise giving her opinion of his cooking to their guests. Bob's muscles tense up and he feels a tight sensation in his stomach. He has an urge to just walk out on the whole situation. When their guests have gone, he tidies up as if nothing is wrong, but acts coldly toward Louise and withdraws from her physically and emotionally.

For the two anger events, the selected symptoms were "muscle tension" and "hot and bothered", the urge was "to express feelings", and the behaviours were "express verbally and nonverbally", e. g.:

> Moira and Doug are going through the bills together. Doug remarks on the current state of their finances. Moira's muscles tense up and she feels hot and bothered. She has an urge to tell Doug what she thinks about his comment. She waves the bank statement in front of Doug and yells at him."

For the two jealousy events, the selected symptoms were "feeling sick" and "agitation", the urge was "to express feelings", and the two behaviours were to "act coldly, withdraw", and "brood about situation", e. g.:

> Rob does not enjoy squash, so Wendy decides to play with a work colleague. Rob is feeling sick and agitated. He wants to tell Wendy how he feels about the situation, but spends most of his time brooding about it instead. When Wendy returns from her first game, Rob acts coldly and withdraws from her physically and emotionally.

Condition 4 - All Information

In this condition, event descriptions were presented along with all the appraisal, symptomatic, urge and behavioural information included in the previous conditions. For example, one of the jealousy events read like this:

> Rob does not enjoy squash, so Wendy decides to play with a work colleague. Rob is feeling sick and agitated. He knows it's not Wendy's fault that she enjoys squash and he doesn't, but he feels she could easily give the game up rather than play with someone else. He wants to tell Wendy how he feels about the situation, but spends most of his time brooding instead. He can't understand what is going on, it's not like Wendy to act this way. When she returns from her first game, Rob acts coldly and withdraws physically and emotionally from her.

Results

Emotion Identification Accuracy

Figure 3 depicts the emotion identification accuracy rates for each emotion over all four experimental conditions. A 4 (information level) x 4 (emotion category) analysis of variance, with repeated measures on the second factor, found a significant main effect for information condition, F (3,96) = 12.07, $p<.001$. As expected, the emotion accuracy rates improved in a linear fashion as more information was presented (event M = 26.5%; event plus prototype M = 51.5%; event plus appraisal M = 55.5%; all information M = 68.5%). In addition, there was a significant main effect for emotion category, F (3,288) = 13.59, $p<.001$. As can be seen in Figure 3, jealousy was the most accurately identified emotion overall (M = 64.5%), followed by anger (M = 53%) and love (M = 49.5%). Hate was the least accurately identified (M = 34%). The interaction effect was not significant.

A series of contrast analyses comparing accuracy rates to the base condition (event description only) was also carried out within each emotion target category. In the event plus appraisal condition, three emotions showed significant differences in accuracy over the event only condition: hate (M = 44%, t (96) = 3.4, $p<.001$), anger (M = 52%, t (96) = 2.2, $p< .02$), and love (M = 52%, t (96) = 3.8, $p<.001$. However, the difference in accuracy for jealousy (M = 58%) was not significant, reflecting its high baseline accuracy.

In the event plus prototype condition, three emotions showed a significant increase in accuracy over the event only condition; anger (M = 58%, t (96) = 2.8, $p < .05$), love (M = 60%, t (96) = 4.7, $p<.001$), and jealousy (M = 72%, t (96) = 2.3, $p<.01$). As illustrated in Figure 3, the accuracy level for hate was much lower in the

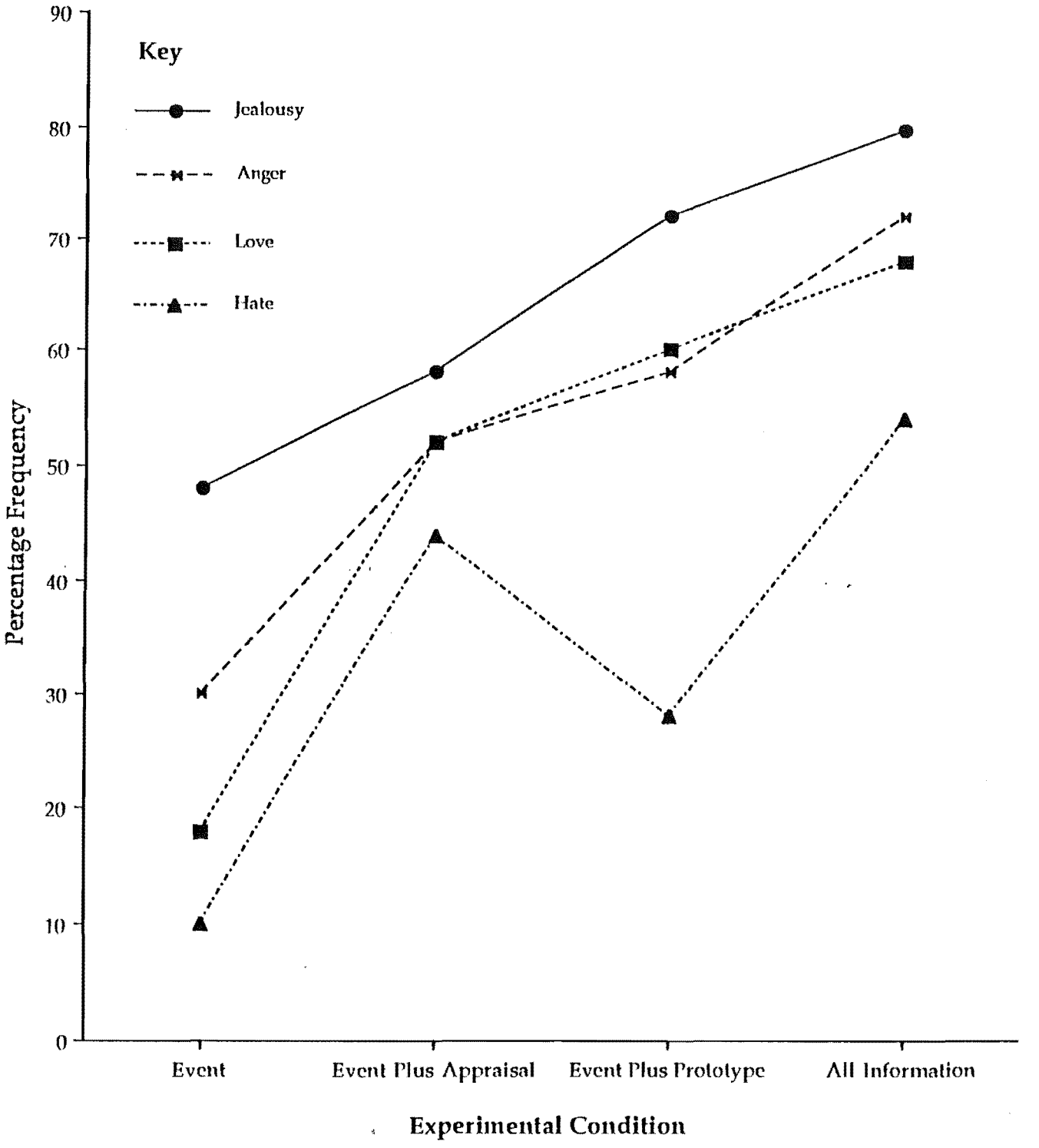

Figure 3. Percentage frequency of correctly identified emotions (love, hate, anger and jealousy) by information condition.

prototype condition than in the appraisal condition, suggesting that for this emotion, as opposed to the other three, appraisal information is more critical to its correct identification than is information about symptoms, urges and behaviours. It should also be noted that this was the only emotion which showed a significant difference between mean emotion accuracy for event plus prototype and event plus appraisal information, t (96) = 2.6, $p<.01$.

Emotions Most Often Chosen Over Target Emotions

Given the suggestion that love and happiness, along with hate and anger, are more or less indistinguishable, (Kemper, 1987; Frijda, 1986) and that jealousy is a complex mix of emotions like anger, fear and sorrow (Sharpsteen, in press), I was interested to see if subjects would in fact be able to discriminate between these emotions on the basis of the prototype and/or cognitive appraisal information obtained in Study 1. The results are depicted in Figures 4 - 7.

Love target emotion. (Figure 4). As Figure 4 illustrates, subjects readily discriminated between love and happiness; indeed, the mean rate of happiness mentions never exceeded 28%, and was only 14% in the all information condition.

Hate target emotion. (Figure 5). Subjects found it difficult to discriminate between hate and anger in the hate target emotion prototype condition, where the mean rate of anger choices was 52%, and the mean rate of hate choices was 28%. The reverse occurred in the appraisal condition, however, where anger dropped to 38% and hate achieved 44%. In the all information condition anger fell to 34%, while hate achieved 54%. These results clearly suggest that the symptoms, urge and behaviours selected from Study 1 to represent hate may be equally representative of anger.

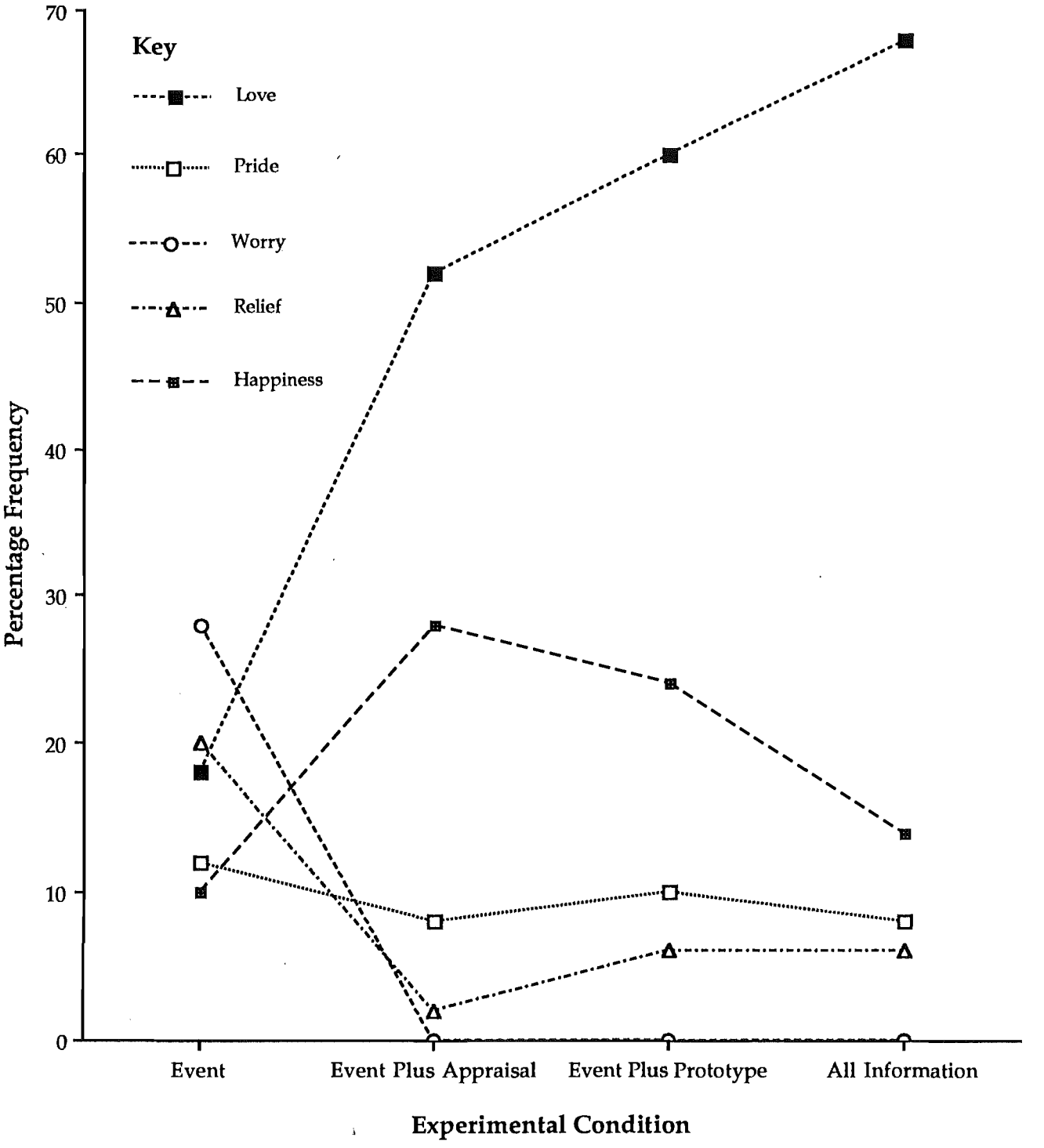

Figure 4. Percentage frequency of alternative emotion choices for the love emotion target by information condition.

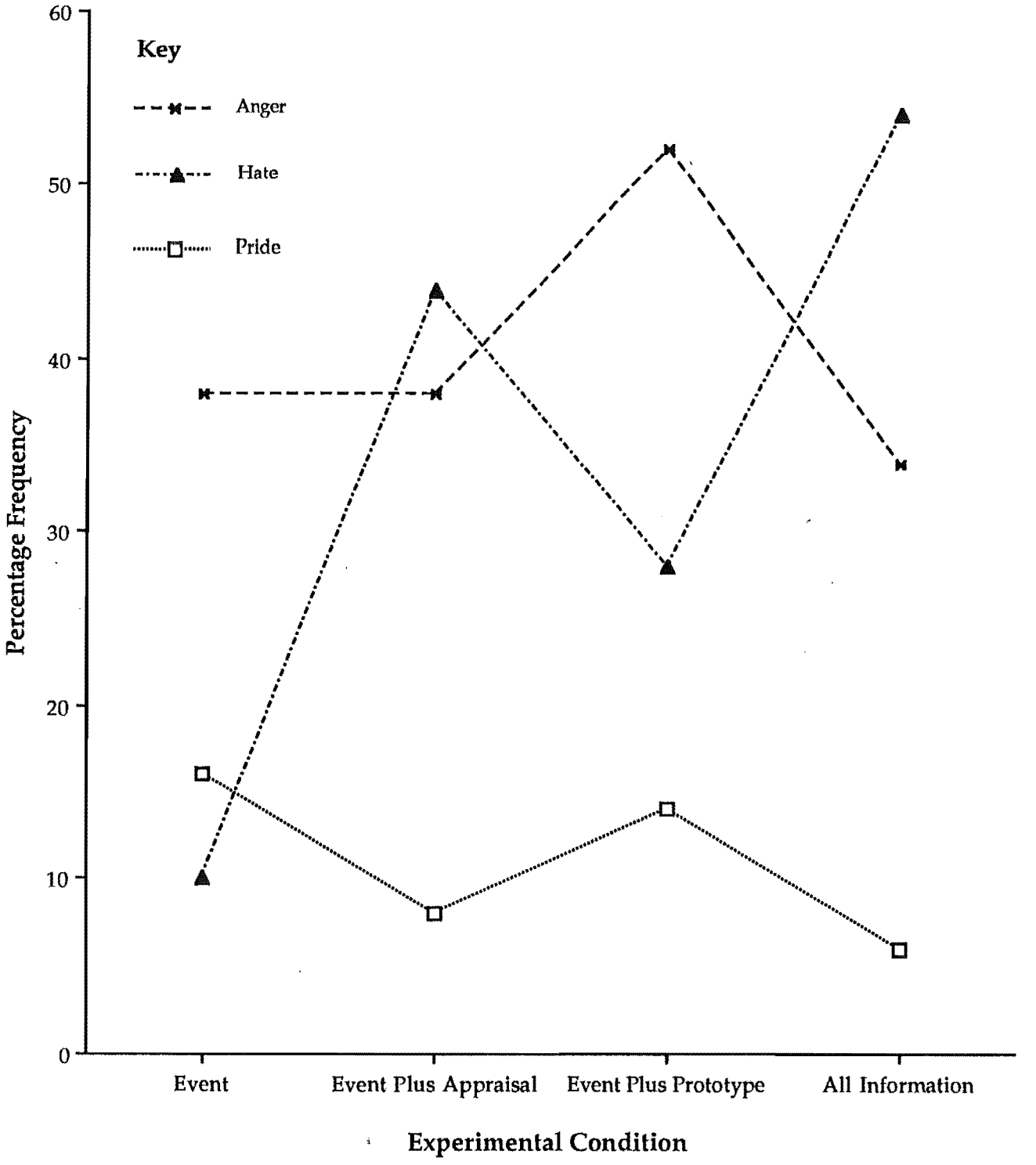

Figure 5. Percentage frequency of alternative emotion choices for the hate emotion target by information condition.

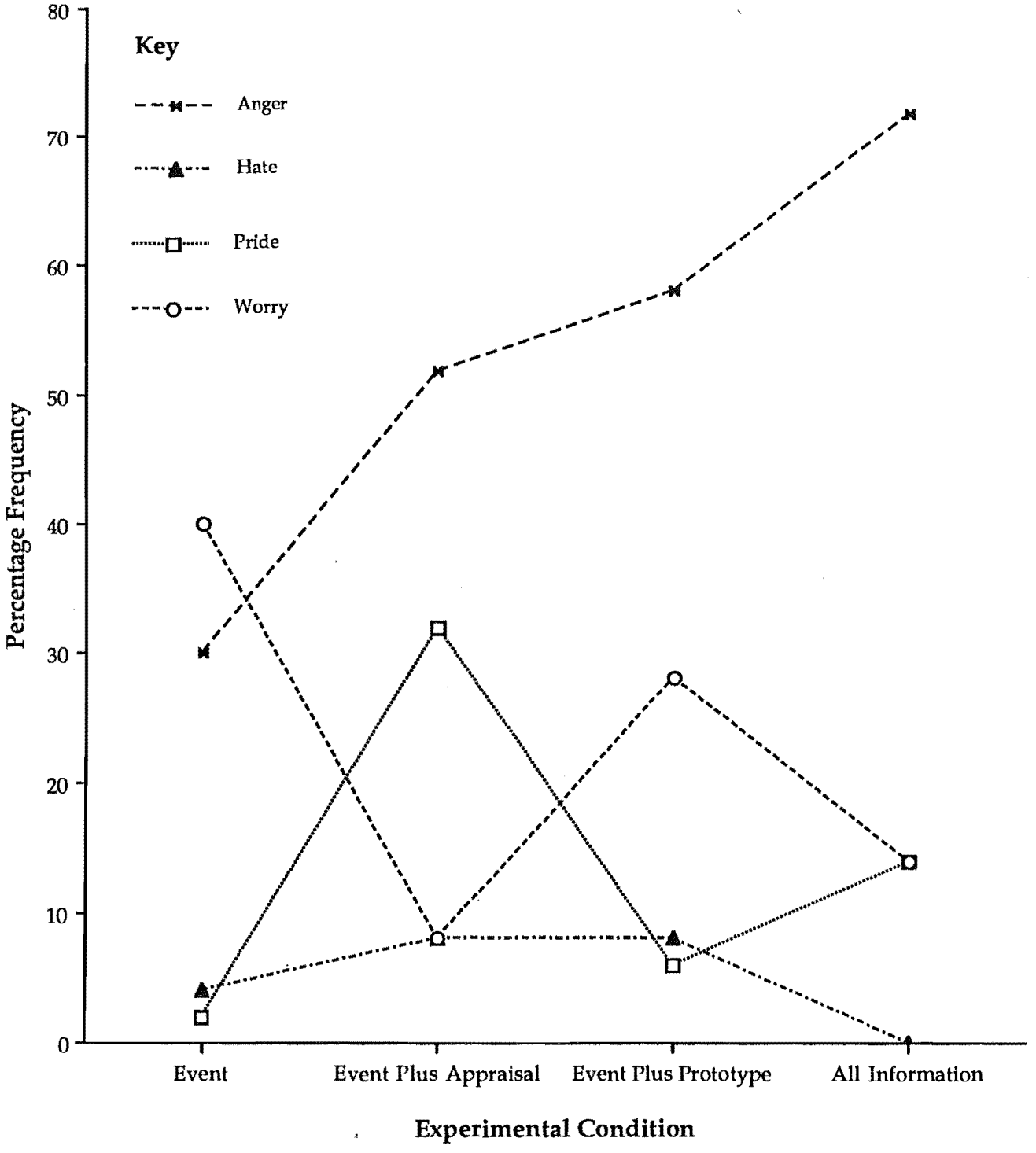

Figure 6. Percentage frequency of alternative emotion choices for the anger emotion target by information condition.

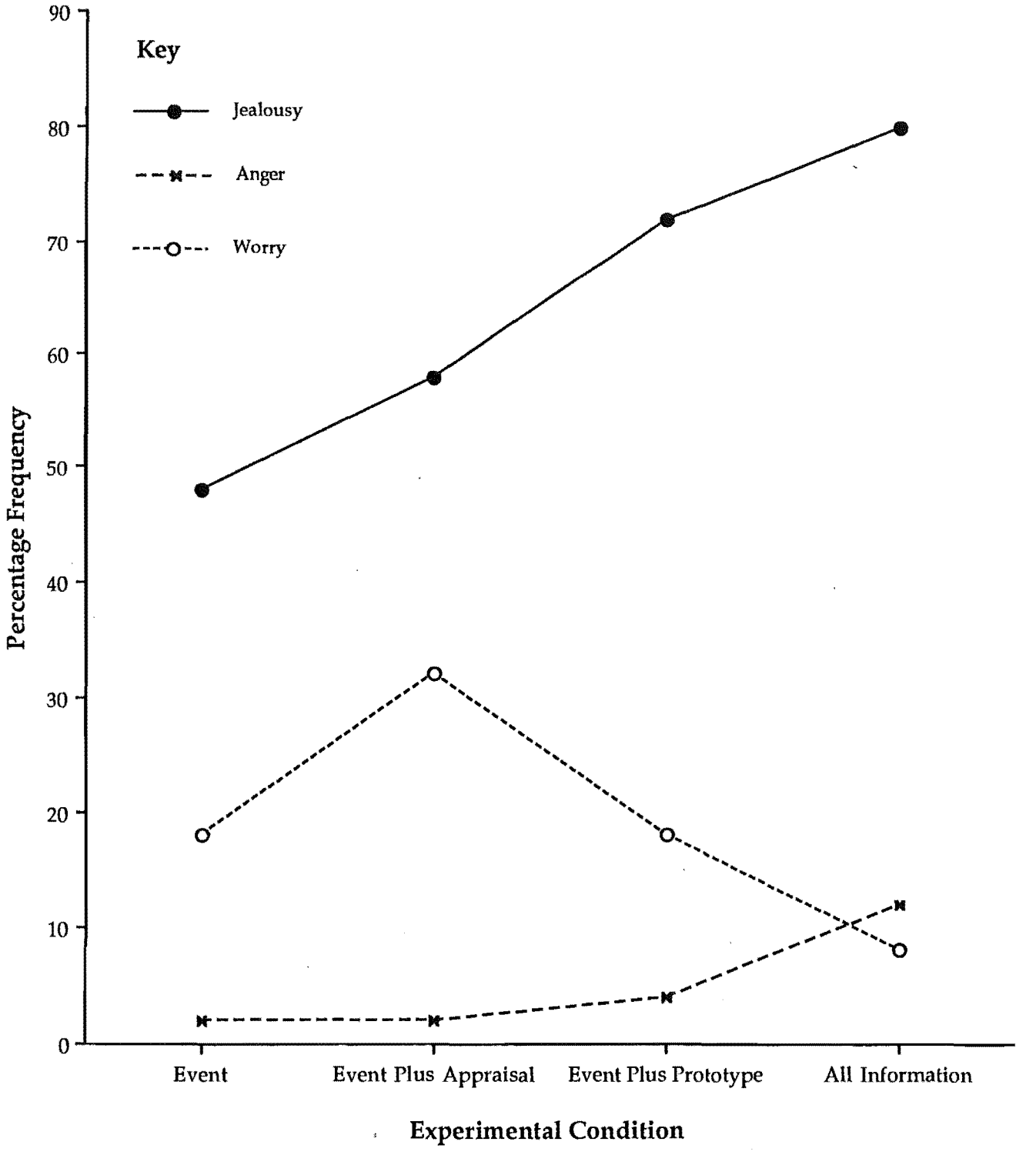

Figure 7. Percentage frequency of alternative emotion choices for the jealousy emotion target by information condition.

Anger target emotion. (Figure 6). The results for the anger target emotion condition (Figure 6), however, indicate an asymmetry in the hate-anger relationship. In both the prototype and cognitive appraisal conditions, anger was rarely confused with hate (M = 8%), and in the all information condition, hate was never selected. Indeed, the most frequently chosen alternative emotion for anger was worry.

Jealousy target emotion. (Figure 7). Like anger, jealousy was rarely confused with any other emotion besides worry. This is in accord with previous research that suggests worry, or anxiety, is a major component of jealousy.

Discussion

The results of this experiment demonstrated that love, hate, anger and jealousy can, by and large, be identified on the basis of the appraisal and/or emotion prototype information gathered in Study 1. The results also suggest that, in the main, emotion prototype information is equally as helpful as cognitive appraisal information for accurate emotion identification. However, the addition of appraisal information to the ambiguous jealousy event did not significantly increase identification accuracy, which was substantial to begin with. Clearly, some property inherent to any three-party, close relationship situation is particularly salient for the elicitation of this emotion label (as hypothesized by Hupka, 1984).

Hate was the least accurately identified emotion over every information condition. In particular, hate prototype information led the majority of subjects to incorrectly identify the target emotion as anger. However, there was an asymmetry in the hate-anger relationship, in that subjects did not confuse the prototypical

anger features with hate.

One explanation of these results is that the prototypical hate features obtained from the recall accounts in Study 1 represent important elements of a more inclusive anger script, or prototype. This accords with Shaver et al's (1987) assertion that emotion concepts are arranged hierarchically, with anger being a more basic emotion than hate. Consequently, prototypical features relevant to hate are subsumed within the broader anger category. A different explanation is suggested by the discrepancies between the urges and behaviors for hate in the recall (Study 1) and hypothetical (Study 2) conditions. Recall accounts cited wanting to leave the situation and acting coldly as criterial features, whereas the most popular features in the hypothetical accounts were wanting to physically hurt the partner, verbally abusing and slapping or kicking them. As previously noted, one interpretation for this is that the recall subjects were loath to admit to such heinous activities, which suggests that the hypothetical accounts produced the more accurate hate prototype. This, in turn, implies that subjects from Study 3 may have more accurately discriminated between hate and anger, had they been presented with the violent urges and behaviours from the hypothetical accounts, rather than the withdrawal behaviours from the recall accounts.

To test these speculations, I conducted a partial replication of Study 3 wuth 50 third year Psychology students. Only two information conditions were investigated, prototype and all-information, with the love, anger and jealousy scenarios being the same as for Study 3. However, the hate scenarios were different, in that the urge to leave the situation was replaced by the urge to physically hurt the partner, and the withdrawal behaviours were

replaced by abusive behaviours (verbal and physical) toward the partner.

As expected, the results for love, anger and jealousy replicated the findings of Study 3 very closely in both information conditions, although subjects were overall somewhat more accurate in the replication (Prototype information only: Love = 58%, Anger = 58%, Jealousy = 76%; Prototype plus appraisal information: Love = 78%, Anger = 74%, Jealousy = 86%). However, the accuracy rate for hate was slightly worse in the revised prototype condition (22%) than in Study 3 (28%), and substantially worse in the all-information (prototype and appraisal) condition (34% as opposed to 54% in Study 3). Subjects overwhelmingly selected anger, as opposed to hate, as the appropriate emotion.

These results do not support the earlier argument that the prototypical features for hate derived from the recall accounts were badly distorted by social desirability biases. Rather, they are consistent with the hypothesis that the urges and behaviours reported in both the recalled (withdrawal) and hypothetical (abusive) hate accounts form part of an inclusive anger script. Moreover, although cognitive appraisal information substantially improved subjects' ability to correctly identify hate in the original study's all-information condition, when appraisal information was combined with abusive urges and behaviours, the accuracy level was much lower. Perhaps this is because hitting and verbally abusing one's partner implies a degree of power that is incompatible with a low situational control appraisal (relevant to hate), and the behaviours override the appraisal information. However, wanting to leave a situation, or acting coldly to one's partner is quite compatible with this kind of low power appraisal,

leading to more accurate hate identification.

Overall, the results suggest the differences between hate and anger are subtle, and depend on the way individuals interpret situations, rather than on their urges and behaviours. The results also suggest that, rather than being inaccurate or idiosyncratic, the prototypical hate features from the recall accounts are reasonably accurate depictions of the script for this emotion within a marital setting. This finding lends weight to McKellar's (1950) and Roseman's (1984) speculations that one feels hate when it is not expedient to express anger. In particular, it is striking that most recall accounts for all three negative emotions reported efforts to control emotional expression, in contrast to hypothetical accounts where such efforts were infrequently reported. Perhaps the hypothetical account subjects did not make allowances for the kinds of emotion-management strategies and accommodation processes couples employ to maintain harmony within their relationships (Rusbult, Verette, Whitney, Slovik & Lipkus, 1991).

Given that emotion prototypes have fuzzy boundaries, we would not expect perfect accuracy in matching emotions to events, no matter how much information is provided. However, these results provide important support for the findings of the first study, particularly with respect to the appraisal dimension distinctions between hate and anger. The fact that naive subjects could make use of this kind of abstract information to identify hate adds considerable weight to the cognitive appraisal approach to emotion.

GENERAL DISCUSSION

The aims of these four studies were to investigate emotion knowledge structures, including prototypes and cognitive appraisals, for love, hate, anger and jealousy within the context of marital relationships. The results can be readily summarized.

In Study 1, married subjects recalled an incident of love, hate, anger or jealousy from their own relationships and wrote accounts of their physiological symptoms, urges, behaviours and appraisals of the eliciting event. Four distinct prototype and cognitive appraisal patterns were obtained for each of the four emotions.

In Study 2, subjects wrote hypothetical accounts describing typical love, hate, anger and jealousy incidents in marriage. In general, the results were in accord with Study 1, suggesting that both kinds of account were derived from the same prototypical knowledge structures. However, there were some discrepancies between the accounts. For example, withdrawal urges and behaviours were commonly cited in recall hate accounts, whereas physically violent urges and behaviours were commonly cited in hypothetical accounts.

Study 3 investigated the extent to which the cognitive appraisal patterns obtained in Study 1 were a function of the causal locus of the emotion, as against the emotion itself. Subjects imagined love, hate, anger or jealousy eliciting events in marriage that had been caused either by themselves, their partners or external factors. Subjects then rated their cognitive appraisals of the event and the emotion according to the same appraisal items that were used in Study 1. Although a significant difference in appraisal patterns was obtained between externally and self/partner caused

hate, no significant appraisal pattern differences according to causal locus were found for love, anger or jealousy. With the causal categories combined, the cognitive appraisal patterns for the four emotions were in general accord with those obtained in Study 1. In general, this study suggested that causal locus is an important appraisal category, but is not the sole determinant of emotion labelling.

The purpose of the final study was to further validate the prototype and cognitive appraisal results obtained in Study 1. Subjects selected the most appropriate emotion from a list of 8 emotions, including liking/love, dislike/hate, anger and jealousy, for 8 interactive events presented with varying amounts of information (event only, event plus appraisals, event plus prototypes, and event plus all information) derived from Study 1. In general, adding prototypical and/or cognitive appraisal information significantly increased emotion identification accuracy over the event-only description, with jealousy being the most accurately identified, and hate the least. A partial replication of Study 4 was conducted in order to test whether hate identification accuracy would be improved if the prototypical features from the recall accounts (withdrawal) were replaced by the features from the hypothetical accounts (verbal and physical abuse). In fact, hate identification accuracy was worse in the replication study, suggesting that prototypical hate features from the recall accounts were reasonably accurate depictions of the script for hate in marriage.

In summary, the results of these four studies with respect to the elicitation, associated cognitive appraisal dimensions and prototypical features of love, hate, anger and jealousy, suggest

that all four emotions represent meaningful emotion knowledge constructs to the married layperson. In the discussion to follow, I will examine the role of context in the study of emotion knowledge structures, and compare what has been learned from these studies with the findings from more typical, context-free research. Directions for future research using the combined prototype and cognitive appraisal approach will be outlined, along with a consideration of ecological validity problems. I will then discuss the importance of including emotion knowledge structures within more broadly-based, cognitive and behavioural models of close relationship processes. Finally, I will conclude with a brief commentary on the theoretical debate concerning the relationship between so-called basic emotions and emotion concepts.

Emotion Prototype Analysis: The Role of Context

An important theme in this series of studies was related to the role of context in the derivation of emotion prototypes, given that previous emotion prototype and cognitive appraisal research has almost invariably been conducted in a context-free fashion. Overall, the prototypes for love, hate, anger and jealousy, derived from within marital settings, revealed a pattern of both similarities and differences. In particular, some intriguing features not usually obtained in the more typical, context-free investigations were obtained. For example, the results of Study 1 revealed some unexpected parallels between anger and love for married couples: both were experienced recently and involved an active engagement with the partner, and the eliciting events for both emotions were appraised as having had predictable courses, along with being partner-caused, somewhat typical, and easy to understand. This suggests, in accord with the emotion frequency results from the

first part of the study, that love and anger are frequently experienced emotions in married life, and that the course of both emotions tends to be well-rehearsed and minutely scripted.

As might be expected on the basis of previous prototype research (e. g. Shaver et al., 1987), the two most closely related negative emotions were hate and anger. However, despite the intriguing finding in the fourth study that the hate prototype was somewhat confused with anger, whereas the anger prototype was not confused with hate, the two emotions did reveal distinct prototypical and appraisal patterns in the first study. This suggests that behavioural affect coding schemes which do not include hate (e. g. Gottman & Levenson, 1986), may not capture the full range of discrete and powerful negative emotions that occur in marital contexts. In general, spouses experiencing hate believed they had been unsupported or badly treated at a deeper and more serious level than was indicated by feeling anger, which more often involved situations in which one partner felt they had been (undeservedly) treated in an inequitable manner. In particular, the perception of low self-control and the high level of perceived obstacles in the hate situations suggest that the partner with less power in a distressed relationship (perhaps involving physical or emotional abuse) is more likely to feel hate than anger (as hypothesized by McKellar, 1950, and Roseman, 1984). Similarly, the results suggest that delivering blows to a partner's self esteem when he or she is already feeling vulnerable (e. g. depressed) can be a powerful elicitor of hate.

Finally, the results indicate that jealousy can be as salient for married couples as it is for those in the first flush of romance. This finding lends weight to Berscheid's (1983) warning

that no marriage or close relationship is immune to the potentially negative effects of a third party intrusion. Similarly, the behavioural profiles associated with jealousy obtained in Studies 1 and 2 (negative self thoughts, brooding, acting coldly, pretending nothing is wrong), are in accord with Stearns' (1989) assertion that the current societal rule for handling jealousy appears to be guilt, circumvention and escape, rather than confrontation. However, while Stearns believes that the desire to present a cool exterior when feeling jealous tends to worsen marital tension, the majority of subjects in Study 1 recalled that their episode of jealousy had a positive outcome. This result indicates that couples, in general, both understand and forgive each other's occasional insecurity and jealousy, despite the widespread belief that jealousy is a destructive, unacceptable emotion in close relationships (Sommers, 1984).

Combining Cognitive Appraisal and Prototype Approaches in the Study of Emotion Knowledge

In accord with previous prototype research (e. g. Shaver et al., 1987), the results of this research indicate that emotion concepts are script-like in nature, initiated by a particular category of event, and proceeding through a number of linked sub-events (including urges, behaviours, physiological reactions, partner reactions, etc.). As Russell (1991) comments, these subevents, described by the concept's features, are ordered in a causal sequence, similar to the way in which actions are ordered in a playwright's script.

Clearly, one step in this causal sequence relates to the individual's cognitive appraisal, or interpretation of the eliciting event. Moreover, in accord with previous cognitive appraisal

research (e. g. Smith & Ellsworth, 1985, 1987), the results of this series of studies indicate that emotions are indeed elicited by (or, at least, associated with) discrete sets of appraisals. However, despite the integral part played by the cognitive appraisal process in emotion script knowledge, research to date has not integrated the cognitive appraisal and prototypical features of emotion into comprehensive emotion metascripts.

One of the aims of this research was to demonstrate the potential strengths of a combined cognitive appraisal and prototype analysis for extending our knowledge of emotions in a variety of settings, but in particular, the close relationship context. Overall, this aim has been achieved, in that cognitive appraisal analysis led to the identification of the kinds of event categories and situational appraisals that differentiate between hate, anger and jealousy in marriage, while prototype analysis provided a wealth of detail about accompanying moods, urges, behaviours, physiological symptoms, control strategies, and partner reactions. Clearly, this combination of the two techniques enables researchers to construct comprehensive and complex accounts of emotion scripts, even when the emotion concepts in question appear to be closely related.

However, an important further step will be to combine the prototype and cognitive appraisal approaches in order to make detailed observational and self-report analyses of emotion prototype features (e. g. urges, symptoms, behaviours), and changing cognitive appraisal patterns, during marital interaction. This kind of research would not only validate the results of retrospective and hypothetical studies such as those reported here, but would also enable researchers to track the links between changes in cognitive appraisals, emotions and behaviours. This has important theoretical

implications, for, as Roseman, Spindel and Jose (1990) have pointed out, cognitive appraisals during an emotion eliciting event (such as a problem solving discussion), may be quite different to the appraisals anteceding the event. For example, one partner may find the interaction unexpectedly effortful, or the discussion may be brought to a surprisingly positive conclusion. These different appraisal patterns should elicit different emotions during the course of the event. Thus, analysis of changing cognitive appraisal patterns during a real time event has the capacity to elucidate our understanding of how emotions fluctuate and change, and in turn influence behaviour, in a dynamic, interactive fashion.

The Problem of Ecological Validity

Another important issue for further research concerns which emotion concepts to study. As noted in the Introduction, the emotion labels of love, hate, anger and jealousy were selected for investigation in this research programme on the basis of their relevance in previous close relationship research (e. g. Fitness & Fletcher, 1990), and because research suggests they represent good examples of the concept of emotion to the layperson (e. g. Shaver et al., 1987).

However, one problem with supplying emotion labels to subjects is that the same emotions or emotion labels may not occur spontaneously in everyday interaction with any great frequency. For example, it may be that, given the option, subjects would have indicated that affection and irritation were the most frequently experienced emotions in their marriages, as opposed to the possibly more intense and inclusive concepts of love and anger. Similarly, hate and jealousy are strong terms, implying intense emotions. As indicated by this group of subjects, such full-blown emotions may be

experienced relatively infrequently in the course of day-to-day married life. In terms of the validity of the prototype and cognitive appraisal data gathered here, there may not be important differences between love and affection, or anger and irritation, apart from the obvious differences in intensity. On the other hand, this is not a conclusion to be taken for granted; for example, Ellsworth & Smith (1988b) have found subtle differences in appraisal patterns between such closely related positive emotion concepts as hope/confidence, tranquillity, challenge, interest, playfulness and love.

This point highlights the need for more descriptive, ecologically valid research into emotions in marriage (see Epstein, 1983, for a discussion on the ecological study of emotions in everyday life). Specifically, researchers need to discover which particular emotion concepts and scripts are the most relevant to married couples, and to construct detailed accounts of couples' knowledge of these scripts. In addition, researchers should investigate how emotion scripts change at different periods of married life; in particular, when couples are very happy or unhappy. Clarke (1987) has made a useful start in this area, by having married subjects think of the most typical kinds of emotional sequences and progressions that occur in marriage (e. g. from romantic love to happiness, and then to boredom and contempt, etc.,) drawing on subjects' own knowledge or their knowledge of other people's marriages. Subjects were required to think of the sequences in terms of months and years, rather than minutes and hours, and to report emotion reciprocity patterns in strict partner alternation sequences. Each subject then built up five different representations of emotion sequences from nine sets of prearranged emotion clusters

(derived from an earlier study on the prevalence of 72 emotions in different types of interpersonal relationship; Clarke, Allen & Dickson, 1985).

At the macro level, the results of this study were interesting in that they identified (albeit very loosely) some of the kinds of emotional progressions and patterns in which the typical couple might expect to be engaged at different times over the course of their relationship. However, at the micro level, the analysis was less useful, given the lack of any theoretical account of the connections between the emotions within the nine clusters, or of the progressions between the emotion clusters themselves. Clearly, these kinds of data would prove more useful if they were integrated with a thoroughly detailed analysis of the prototypical features (including cognitive appraisals) that accompany not only the shifts between emotional subsystems, but also the shifts from one discrete kind of emotion to another within each subsystem.

The Role of Emotion Knowledge Within Current Models of Close Relationship Processes

The results of these four studies demonstrate that married people have stored emotion knowledge structures about eliciting events, symptoms, urges, appraisals and behaviours for a number of discrete emotions. No doubt, these structures profoundly influence the ways in which married people perceive, interpret and experience events and emotions in their relationships with one another. However, to date, there has been limited treatment of emotion and emotion knowledge structures within theoretical models of close relationship processes. For example, by restricting their definition of affect to observable, positive and negative nonverbal behaviours, Gottman and his colleagues have assigned emotion a relatively minor

role in marital interaction. Similarly, Berscheid's (1983) analysis of emotion elicitation in close relationships implies that emotions are relatively mindless, semi-automatic, physiological and behavioural reactions to partner-caused interruptive events. Clearly, both approaches are at odds with the emotion knowledge structure approach adopted in this research.

Recently, a number of theorists working from within a social cognitive perspective have included the role of emotion in interactive close relationship research (see Fletcher & Fincham, in press). In particular, Bradbury and Fincham (1987) have developed a model of cognition and emotion in marriage, based on Weiner's (1985) causal attribution theory of emotion: this is termed the contextual model. According to Bradbury and Fincham's model, attributions for interruptive relationship events are related to specific, emotional consequences. Thus, during an interaction such as a problem solving discussion, behavioural input from one partner (e. g. a critical remark) triggers an initial affective response (positive or negative) in the other, based on an immediate, primary appraisal of the behaviour's valence. A causal search is then undertaken to identify the cause of the event and assign responsibility for it. This is a conscious, secondary appraisal process, and leads to the specific emotional reaction.

An immediate problem that arises with this model is that, as these studies have illustrated, causal locus is only one factor in the elicitation of specific emotions. Thus, this theory needs a much wider range of cognitive appraisal features if it is to predict specific emotion outcomes with any degree of accuracy. However, the model does represent an important advance over Weiner's analysis, because it attempts to come to grips with some of the contextual

features that influence both the primary and secondary appraisal processes involved in emotion. Specifically, Bradbury and Fincham draw a distinction between the proximal and distal context of an event. The proximal context refers to such variables as the thoughts and feelings of a partner immediately prior to processing an event. For example, a bad mood may influence perception processes, resulting in selective attention being paid to the negative aspects of a situation. Thus, a remark that might have been shrugged off one day, is perceived as being unfairly critical the next. The distal context refers to dispositional constructs stored in long-term memory and includes such variables as an individual's characteristic way of viewing the world and interpreting situations, along with his or her beliefs and expectations about relationships and what constitutes acceptable partner behaviour.

The contextual model has been further developed by Fletcher and Fincham (in press), who include in the distal context such variables as relationship satisfaction, relationship beliefs, and relationship knowledge structures. All of these variables are held to influence the way in which close relationship partners perceive and interpret each other's behaviours in interactive settings. However, although the importance of affective states (e. g. moods) in priming attributional activity in the proximal context is acknowledged in the contextual model, the role that emotion knowledge structures (included in the distal context) might play is ignored.

Given the neglect of emotion in close relationship research generally, this omission is, perhaps, not surprising. However, the results of this series of studies clearly indicate that partners' perceptions, cognitive appraisals and emotional reactions in

response to relationship events and partner behaviours are likely to be powerfully shaped by their emotion knowledge structures. Thus, I believe the explanatory power of social cognitive models of close relationship interaction would be considerably enhanced if emotion knowledge structures were treated as an integral part of the distal context, along with more general relationship knowledge structures.

No doubt, expanding the scope of social cognitive theory and research in close relationships to include a consideration of emotion knowledge structures, particularly within interactive settings, presents a number of complex and challenging tasks to investigators. However, some suggestions for research along these lines have been made already. Another suitable methodology for tapping into distal knowledge structures and emotion in relationships could involve the detailed study of participants' stories, or accounts of emotionally relevant relationship events (Harvey, Agostinelli and Weber, 1989).

To conclude, I believe the lack of an overall theoretical focus has hampered the investigation of emotions and emotion knowledge in close relationships. Clearly, if such models are to develop into more powerful explanatory accounts of relationship (including emotion) processes, then the time has come for a rapprochement between the two areas.

Love, Hate, Anger, Jealousy: Basic Emotions?

Since the inception of this research programme, disquiet has been growing amongst emotion theorists and researchers concerning the relations between accounts of emotion concepts on the one hand, and what Clore & Ortony (1991) call "emotions proper" on the other. Shaver et al. (1987) fuelled the debate when, in the course of their prototype analysis of love, anger, fear, sorrow and joy, they

speculated that these basic semantic categories possibly reflected a biological basicness; that is, humans may be hard-wired for the five states represented by these particular emotion concepts. Johnson-Laird & Oatley (1989) argued an even stronger case when they asserted that the words used to describe emotional experiences are intimately related to the real nature of emotions, and that every type of emotion depends on a small set of emotional modes, expressed semantically (and in English!) as happiness, sadness, fear, anger and disgust.

Other theorists, however, warn against making assumptions of this nature. For example, Russell (1991) argues that the topic of a prototype analysis is concepts, and not the events so conceptualized. And, Scherer (1988) urges for a clear distinction to be made between emotion labelling studies, which are concerned with the shared social representation of the meaning structure of emotion terms, and studies of emotional states or processes. This latter category, he speculates, may be unknowable in a verbal sense.

One reason for this growing debate appears to originate from the long-standing tendency of theorists to conceive of emotions as being organized in a hierarchical fashion (Averill, 1990). This belief has led to a number of attempts to discover the irreducible, biological qualia from which all emotions are derived (e. g. Izard, 1977), as well as attempts by theorists like Shaver et al. (1987) and Johnson-Laird & Oatley (1987) to discover the corresponding semantic qualia from which all emotion concepts are derived.

However, I believe there is a very real problem in trying to equate a semantically basic concept, such as anger, or love, with a biologically basic brain structure. As emotion prototype research (including the present study) has demonstrated, emotions are not

objects with necessary and sufficient properties that can be concisely encapsulated within a single word, no matter how basic. Rather, emotions are complex syndromes, constructed from within each individual's social world, and comprising physiological, behavioural, cognitive and social components (no one of which is necessary or sufficient to define a particular emotion). From this perspective, there are no emotions proper; rather, there are a number of overlapping and fuzzily defined emotion syndromes with cognitive, social, behavioural and phenomenological components. No one component can be lifted out and defined as the emotion. Accordingly, an analysis of, say, the cognitive component of an emotion syndrome is no less basic than is an analysis of the physiological, or phenomenological component.

In accord with this perspective, a number of theorists (e. g. Ortony & Turner, 1990; Ellsworth, 1991) have suggested that we do away with the idea of so-called basic emotions altogether. Rather, it is more useful to conceive of emotions as combinations of a number of different components and subcomponents, e. g. emotional responses and expressions (some of which may be biologically basic), and sequences of cognitive appraisals, than to seek basic, reified, emotion entities. From this viewpoint, the study of emotion syndromes can be profitably tackled from a number of different levels of analysis, ranging from micro investigations of the physiological, behavioural or cognitive components and subcomponents of emotions, to broad, sweeping investigations of the history and social construction of emotions within and across cultures (e. g. Hochschild, 1983; Harre, 1986; Stearns, 1989).[3]

Previously, I argued that further research needs to examine the links between emotion prototypes and cognitive appraisal patterns,

along with other constructs such as behaviour and physiology. I believe the analysis offered here makes it clear that this process can be viewed as a way of unpackaging and analysing the emotion syndromes themselves.

Conclusion

The focus of this research has been the layperson's socially shared knowledge structures (including cognitive, physiological and behavioural elements) about love, anger, hate and jealousy in marriage. The results indicate that each of these emotion labels represents a meaningful, discrete, emotion knowledge structure to the married layperson. Of course, there are an enormous number of questions still to be answered, at both the micro level and the macro level. For example, we have a great deal to learn about the various emotion syndrome components, each of which received limited treatment in the course of this study. Similarly, we need to know much more about the influence of culturally prescribed rules for emotions and emotional expression and regulation in close relationships, and we need to locate relationship relevant, emotion knowledge structures within more overarching theories of close relationship processes.

Nonetheless, the results of this series of studies represent a beginning in the long overdue exploration of emotions in close relationships. Further work in this area should lead to a deeper understanding of this mysterious, but central, aspect of human experience.

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Footnotes

[1] All results in these four studies were analysed for possible sex differences. Consistent with other emotion prototype or appraisal studies, no significant sex differences were found.

[2] The sample size for each of the four factor analyses was very small (40 subjects in each group), which considerably reduces the power and interpretability of the factorial solutions. Consequently, it was decided not to report these results in the main body of Study 1. However, the results are summarized in Appendix 6.

[3] With respect to this point, it should be noted that, like emotion, marriage is also a socially constructed concept that changes over time. Clearly, although research into the changing sociocultural and historical constructions of marriage would be a worthwhile exercise, integrating such research with an analysis of changing sociocultural and historical constructions of emotion(s) would be particularly rewarding (e. g. see Bernard's, 1977, analysis of the interdependent relationship between changing concepts of jealousy and marriage).

Appendix 1

Emotion Frequency and Intensity Questionnaire

1) How often do you experience feelings of <u>love</u> (note, not lust or passion) for your partner?

(Never) 1 2 3 4 5 6 (Always)

2) Do you ever experience such loving feelings intensely?

(Never) 1 2 3 4 5 6 (Always)

3) How often do you feel <u>jealous</u> in relation to your partner?

(Never) 1 2 3 4 5 6 (Always)

4) Do you ever experience such jealous feelings intensely?

(Never) 1 2 3 4 5 6 (Always)

5) How often do you experience feelings of <u>hatred</u> for your partner?

(Never) 1 2 3 4 5 6 (Always)

6) Do you ever experience such feelings of hatred intensely?

(Never) 1 2 3 4 5 6 (Always)

7) How often do you get <u>angry</u> with your partner?

(Never) 1 2 3 4 5 6 (Always)

8) Do you ever experience such feelings of anger intensely?

(Never) 1 2 3 4 5 6 (Always)

Appendix 2

Along with completing an emotion frequency and intensity questionnaire in Study 1, married subjects also completed three individual difference measures: Relationship Happiness (Grigg, Fletcher & Fitness, 1989), Attachment Style (Hazan & Shaver, 1987) and Affect Intensity (Larsen & Diener, 1987).

The Relationship Happiness Questionnaire includes six global judgements on 6 pt. scales measuring perceptions of love, happiness, general satisfaction, relationship stability, seriousness of problems, and level of commitment. The scale has demonstrated good internal reliability, test-retest reliability and convergent validity in previous research (see Fletcher, Fitness & Blampied, 1990).

The Attachment Style Questionnaire was derived from Hazan & Shaver's (1987) three-item attachment measure, and includes 12 items on 6 pt. scales (four items measuring each attachment style: secure, avoidant and anxious-ambivalent). Theoretically, people with a secure attachment style are trusting and comfortable with closeness, unlike people with an avoidant style, who are distrustful and uncomfortable with closeness. Anxious-ambivalent subjects are thought to be concerned with insufficient closeness and emotionally labile - experiencing the heights of ecstasy and the depths of despair in their relationships.

Finally, the Affect Intensity questionnaire (AIM) includes 40 items on 6 pt. scales and measures subjects' characteristic emotional intensity. This scale has undergone rigorous testing and is considered to be both a reliable and valid measure of dispositional affect intensity (Larsen & Diener, 1987).

These scales were administered for exploratory, rather than

theoretical, reasons, and the results are not germane to the major theme of the research programme. However, as can be seen in Table 7, some interesting correlations were obtained between the three measures and emotion frequency and intensity.

As might be expected, relationship happiness was positively related to the frequency and intensity of love, but, unexpectedly, relationship happiness was also positively related to the frequency of jealousy. Also as expected, subjects with high Affect Intensity tended to experience love, anger and jealousy (although not hate) intensely. Again, however, an unexpected finding was that high Affect Intensity was also related to the frequency of jealousy.

Anxious-ambivalent subjects appear to have the most miserable time of it in their relationships, experiencing hate, anger and jealousy frequently, love only infrequently, and anger and jealousy intensely. Avoidant subjects appear to experience love infrequently, but do not experience negative emotions particularly frequently; nonetheless, when they feel angry, it tends to be intense. Finally, secure subjects experience love frequently, though not intensely, and are particularly unlikely to experience hate intensely.

Although these results are only preliminary, they suggest a number of interesting directions for further research, and underscore the importance of considering individual difference measures when conducting in-depth analyses of couples' affective lives.

Table 7

Correlations Between Emotion Frequency and Intensity, Affect Intensity (AIM), Relationship Happiness and Attachment Style

Frequency	Happy	AIM	Secure	Avoid	Anxious
Love	.55***	.14	.38***	-.23*	-.25**
Hate	-.17	.21	-.09	.11	.31***
Anger	-.17	.19	-.17	.10	.32***
Jealousy	.25**	.29***	-.01	.05	.32***
Intensity					
Love	.43***	.32***	.21	-.16	-.03
Hate	-.14	.21	-.28***	.16	.20
Anger	-.09	.28***	-.18	.24**	.30***
Jealousy	.16	.27***	-.08	.00	.25**

Appendix 3

Emotion questionnaire

First, just relax.

When you feel relaxed and comfortable, try to remember the most recent time you felt particularly JEALOUS in relation to your partner. Don't panic if you can't think of an incident right away, just relax and drift mentally through your memories of your life with your partner. Remember, there is no right or wrong way to think about what "jealousy" means - you can interpret the word any way you want. Just think about an incident with your partner in which you personally felt "jealous" (even if only mildly).

When you've thought of an incident, take a few moments to recall as many details of the incident as you can, and concentrate on the JEALOUS feeling you had. Imagine you are back in that situation; what happened? How does it feel? When you're ready, please answer the questions below (take as much time and paper as you want).

Remember, you must answer the questions according to how you felt THEN, not how you see the situation now. Imagine, you are back in that situation....

1) How long ago did this incident happen?

2) What kind of emotional state or mood were you in before the incident?

3) Please explain in detail what actually happened to make you feel jealous.

4) What were you thinking while you were jealous?

5) What did you say, if anything, and how did you say it?

6) What did you feel physically while you were jealous? (For example, in your stomach, or muscles, etc.)

7) Did you have an urge to do something while you were jealous, even though you may not have given way to it?

8) What did you do while you were feeling jealous?

9) Did you try to control your jealousy? Why or why not?

10) If you tried to control your jealousy, how did you do that? Was it difficult? Why?

11) About how long did the jealous feeling last?
(Please tick)

seconds
minutes
hours
days
Other (please specify)

13) How did your partner react to your jealousy?

14) What was your emotional state, or mood, after the incident was all over?

15) Can you add anything else that would help describe the jealousy episode more fully?

Please think once more about the jealous episode with your partner.

Using your key, please circle the number that best describes how yo felt at the time of the event (not how you see or understand the situation now).

1) Was your jealousy an intense feeling?

(Not at all) 1 2 3 4 5 6 (Extremely)

2) At the time, how pleasant or unpleasant was it to be in this situation?

(Very unpleasant) 1 2 3 4 5 6 (Extremely pleasant)

3) At the time, did the incident that made you jealous matter a great deal to you?

(Not at all) 1 2 3 4 5 6 (Extremely)

4) Was the incident that made you jealous unexpected?

(Not at all) 1 2 3 4 5 6 (Extremely)

5) At the time, to what extent did you feel the incident that made you jealous was good for you and your relationship?

(Not at all) 1 2 3 4 5 6 (Extremely)

6) At the time, how certain were you that you understood what was happening in the situation?

(Not at all) 1 2 3 4 5 6 (Very certain)

7) Did you have to make a real effort (physical or mental) to cope with this situation?

(Not at all) 1 2 3 4 5 6 (A great deal)

8) Think about what you needed or wanted in this situation. To what extent did there seem to be serious obstacles in the way of getting what you wanted or needed?

(No obstacles) 1 2 3 4 5 6 (Serious obstacles)

9) While you were in this situation, how well did you feel that you could predict what was going to happen next?

(Not at all) 1 2 3 4 5 6 (A great deal)

10) At the time, to what extent did you feel you were to blame for the incident?

(Not at all) 1 2 3 4 5 6 (Completely)

11) At the time, to what extent did you feel your partner was to blame for the incident?

(Not at all) 1 2 3 4 5 6 (Completely)

12) To what extent did you feel you were in control of the incident that made you feel jealous?

(Not at all) 1 2 3 4 5 6 (Completely)

13) To what extent did you feel your partner was in control of the incident?

(Not at all) 1 2 3 4 5 6 (Completely)

14) To what extent did you feel this incident was somehow "typical" and would probably happen again in the future?

(Not at all) 1 2 3 4 5 6 (Extremely)

15) Please think about the cause or causes of your jealousy. To what extent do you think your feeling was caused by your partner, yourself, or outside circumstances?

Partner:

Very unimportant Cause 1 2 3 4 5 6 Extremely Important cause

Self:

Very unimportant Cause 1 2 3 4 5 6 Extremely Important cause

Circumstances and external influences:

Very unimportant Cause 1 2 3 4 5 6 Extremely Important cause

18) To what extent do you think the causes(s) of your feeling of jealousy would be specific to this one situation?

Not at all specific: present in many areas of the relationship	1	2	3	4	5	6	Completely situation specific

Appendix 4

KEY

To answer the questions in this questionnaire, you just circle the number underneath the question that best represents your opinion. For example, if the question reads: "How often do you hug your partner?" and your answer is "Never", you would circle number 1. If your answer is "Quite often", you would circle number 4.

Keep this key with you as you go through the questions, just to remind you what the numbers underneath the questions stand for.

1 = Not at all; Never

2 = Very little; Not much; Hardly ever

3 = Moderately; Sometimes; Occasionally; Somewhat

4 = Quite a lot; Quite often

5 = Very much; Very often; Usually; Almost always

6 = Extremely; Always

Appendix 5

Hypothetical Emotion Questionnaire

EMOTION: HATRED.

Forgetting about your own relationship specifically, please think about the most typical kind of incident that makes one partner hate the other in a close relationship. Just one example will do, but try and make it the most typical example you can think of. Now, please answer the questions below (take as much time and paper as you want).

1) What would probably have happened to make one partner feel hatred for the other?

2) Who or what is usually to blame for the incident?

3) How do you think the person hating their partner would feel physically?

4) What do you think the person hating their partner has the urge to do?

5) What would he or she probably be thinking?

6) Would he or she be likely to express the feelings of hatred? If so, how?

7) Is there anything else you can think of that would describe a typical incident involving hatred more fully?

Appendix 6

Factor Analysis Results of Cognitive Appraisal Dimensions from Study 1

The cognitive appraisal dimension items for each emotion in Study 1 were submitted to a principal components factor analysis. Because of the small number of subjects in each analysis, (n = 40), the analyses were exploratory only, and the results should be interpreted with caution.

For each emotion, three factors with eigen values greater than 1 were obtained from orthogonal, rotated analyses. The three factors for each emotion accounted for between 42% and 45% of the variance, amd accounted for approximately equal amounts of variance. Interestingly, and in accord with emotion-eliciting events, a definite locus/responsibility factor emerged for all four emotions. For example, the first factor extracted for love was clearly related to self, with factor loadings of .59 for self responsibility, .57 for self-cause, and .54 for self being in control of the event. For anger, the first factor extracted was partner related, with factor loadings of .71 for partner-cause, .59 for partner responsibility, and -.52 for self responsibility. For hate, the second factor was partner related, with factor loadings of -.82 for self responsibility, .77 for partner responsibility, -.64 for self-cause, -.49 for self in control, .46 for partner-cause, and .44 for partner in control. For jealousy, the second factor was clearly related to external-cause, with factor loadings of -.82 for self-cause, .71 for a situationally specific cause, .57 for an external-cause, and -.48 for self responsibility.

Although the sample sizes were too small to allow confident interpretations of the results, they do suggest that causal locus is an important appraisal dimension in emotion labelling.

Appendix 7

Study 3 Emotion Questionnaire

First, just relax.

Now, please imagine that you are feeling LOVE for your partner.

The reason you are feeling love, or the cause of your loving feeling, is something to do with YOUR PARTNER and what your partner is doing. Your partner can take credit for the feeling, your partner is responsible for the feeling. For example, it might be that your partner is supporting you through a difficult time, or has bought you a special gift.

Take a few minutes to imagine the scene..you are feeling love for your partner, and the cause is something to do with your partner...

When you feel you are ready, please answer the questions below.

1) What kind of event have you imagined? What has happened?

2) Concentrate on the feeling of love. How intense is the feeling?

(Not intense) 1 2 3 4 5 6 (Extremely intense)

3) How unpleasant or pleasant is this situation for you?

(Extremely Unpleasant) 1 2 3 4 5 6 (Extremely Pleasant)

4) How important is this situation in the context of your relationship?

(Not important) 1 2 3 4 5 6 (Very important)

5) How certain are you that you truly understand the situation?

(Extremely Uncertain) 1 2 3 4 5 6 (Extremely Certain)

6) How unexpected is the situation that has caused your love?

(Completely Unexpected) 1 2 3 4 5 6 (Completely Expected)

7) Are you having to make a real effort (physical or mental) to cope with the situation?

(No effort) 1 2 3 4 5 6 (Extreme effort)

8) Are there serious obstacles getting in the way of what you need or want?

(No obstacles) 1 2 3 4 5 6 (Extreme obstacles)

9) Keep imagining yourself in the situation. How well can you predict what will happen next?

(Can't predict) 1 2 3 4 5 6 (Easily predict)

10) To what extent do you feel in control of the situation?

(No control) 1 2 3 4 5 6 (Complete control)

11) To what extent do you think your partner is in control of the situation?

(No control) 1 2 3 4 5 6 (Complete control)

12) To what extent do you think you have caused this feeling of love?

(Not at all) 1 2 3 4 5 6 (Completely)

13) To what extent do you think your partner has caused this feeling of love?

(Not at all) 1 2 3 4 5 6 (Completely)

14) To what extent do you think external circumstances have caused this feeling of love?

(Not at all) 1 2 3 4 5 6 (Completely)

15) Do you feel the situation is somehow "typical" and will probably happen again in the future?

(Not typical) 1 2 3 4 5 6 (Extremely typical)

16) Remember that YOUR PARTNER is responsible for this feeling of love. How often do you think he or she would be specifically responsible for other loving occasions in your relationship?

(Not often) 1 2 3 4 5 6 (Extremely often)
